A TREATISE

ON

VETERINARY MEDICINE,

VOL. II.

2468

CONTAINING

THE MATERIA DIETETICA,

THE MATERIA MEDICA,

AND

THE PHARMACOPŒIA.

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VENIENTI OCCURRITE MORBO.

THE SIXTH EDITION,

VERY CONSIDERABLY ENLARGED AND IMPROVED.

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PREFACE.

It has been the opinion of almost every veterinary author that many, if not the greater part, of the diseases of horses are occasioned by improper management; and the truth of the observation is admitted, I believe, by every experienced person who has read and reflected upon the subject. For, notwithstanding the attempts that have been made by those who have written on veterinary medicine to improve the general treatment of horses, the same improper management is still general, and seems particularly to prevail among those persons to whom the preservation of the horse's health is an object of the greatest importance. The truth of this assertion may easily be determined by examining the stables in which post-horses, and others of a similar description are commonly kept: and, by inquiring into their manner of feeding, watering, working, &c., not only will the truth of this statement then be seen, but it will also be found that there is scarcely one horse in ten among them that is not unsound. If young horses were brought to their work gradually, and not employed in any severe labour until their muscles and other parts had acquired their full power, the duration of their services would perhaps average ten or twelve years, but at present it does not, I believe, exceed half that period. It may be supposed that the improvements which have been sug-

gested were very expensive, or such as had been found impracticable; but this is not the case. The expense of bruising oats, for example, would be amply repaid by the additional nutriment they would afford, the greater ease with which they would be digested, and the consequent improvement in the animal's health and strength. This is a consideration of more importance than horse proprietors are aware of. The reduction of a horse's allowance of hay, when he eats more than does him good (a very common circumstance), would be found, at the end of the year, a considerable saving; and, if we add to these considerations the probability of its being the means of avoiding diseases, and of enabling the horse to do his work with more spirit and energy than he otherwise could, this alone should be a sufficient inducement to attend to the advice that has been given on this subject. The disease termed fret or gripes often depends upon indigestion, and is commonly produced by swallowing corn greedily without sufficient mastication; for it has been shown by Mr. Peall, that when oats pass into the stomach unbroken, they are absolutely indigestible, are voided unchanged, and afford considerable nourishment to poultry and birds. When much corn is swallowed in this way, and the horse is suffered to drink freely, they swell considerably, the digestive process is performed with difficulty, and considerable time is required for the stomach to get rid of its load. While the stomach is in this state the animal is often put to work; and, if a severe illness be not the immediate consequence, a repetition or continuance of such a practice gradually weakens this important organ, and the parts connected with it, and thereby lays a foundation for many diseases. With some proprietors the quality

of the oats, but more especially of the hay, is a matter of indifference, provided it can be purchased at a low price. This, however, is an error of considerable magnitude, and I have known it productive of the most serious evils. With some it is a practice to give horses water immediately after it has been drawn from a deep well, both in summer and winter. In winter such water is preferable, I believe; but in summer, and especially when a horse is hot and fatigued, it often does much injury, being then considerably colder than the water of ponds or rivers. By such errors, and others, which, in the following pages, are only occasionally and briefly noticed, added to the injurious practice of working horses when too young and unseasoned, or in a manner not proportioned to their natural strength or suited to their condition, many diseases are produced, the treatment and prevention of which are more particularly considered in the first and third volumes of this work. This volume consists of a MATERIA MEDICA; that is, a description of the various articles or drugs employed in medicine, especially such as are used in veterinary practice, and a PHARMACOPŒIA, or directions for compounding or mixing them, with occasional observations on the diseases for which they are usually prescribed.

In some former editions the Pharmacopœia and Materia Medica formed two distinct parts; in the present they are incorporated; that is, the medicinal article or drug, the class to which it belongs, and the formulæ or receipts, are arranged in the same alphabet. This plan appeared to the author more convenient than that originally adopted. Some readers will perhaps object to the number and variety of the formulæ, as well as to the number of ingredients which some of them contain;

but, however desirable simplicity may be in medicinal composition, there is, perhaps, a limit which it would be dangerous to pass. On this subject, Dr. Paris, in his Pharmacologia, makes the following remark: "I have already observed that all extravagant systems tend, in the course of time, to introduce practices of an opposite kind: this truth finds a powerful illustration in the history of medicinal combination; and it becomes a serious question, whether the disgust so justly excited by the *polipharmacy* of our predecessors may not have induced the physician of the present day to carry his ideas of simplicity too far, so as to neglect and lose the advantages, which in many cases, beyond all doubt, may be obtained by scientific combination." "I think," says Dr. Powel, "it may be asserted, without fear of contradiction, that no medicine compounded of five or six simple articles has hitherto had its powers examined in a rational manner." Dr. Fordyce first demonstrated the existence of the singular and important law, that *a combination* of similar remedies will produce a more certain, speedy, and considerable effect, than an equivalent dose of any single one; thus cathartics not only acquire a very great increase of power by combination with each other; but they are at the same time rendered less irritating in their operation. The same observation is applied to other classes of medicines, especially to diuretics, alteratives, cordials, and tonics. The sanction of such authorities is sufficient, it is hoped, to obviate any objections that may be made to the complexity of some of the formulæ; and though the structure of the human stomach and parts connected with it is so different from those of the horse, as to render all analogical reasoning as to the effect of medicine un-

certain, yet we have been too precipitate, perhaps, in dismissing it almost entirely from our consideration. There are several medicines, such as sugar of lead, white vitriol, &c. which produce scarcely any effect on the horse, though of considerable power in the human body; yet it is not very improbable that such medicines when given daily for some time in small doses may produce a salutary effect, or even prove deleterious when largely and incautiously so employed. Arsenic has been given to a horse in a dose of two drams twice a day, for several days, without any considerable effect being produced; but in one case a sixth part of that quantity occasioned a fatal inflammation of the stomach and bowels. When the stomach of a horse is in a healthy state, it will bear an astonishing quantity of medicines which in the human stomach are either poisonous or powerful medicinal agents; but in some diseased states of the horse's stomach, which are not unfrequent, the same medicines, or others commonly deemed innocent, will produce a powerful and even fatal effect. Mr. James Clark relates two cases of this kind:—one of the horses died from taking a pint of vinegar, and the other from taking a drench in which there was one ounce of nitre and half an ounce of spirit of hartshorn. The experiments that have been made with a view to ascertain the effect of medicine upon the horse should not be too confidently depended upon, as they have generally been made on glandered horses, or such as were incurably lame; in which case it may fairly be presumed that the stomach was in a healthy state. The experiments that have been tried also to ascertain the effect of tobacco on the horse afford a striking proof of the propriety of attending to this circumstance. At the Veterinary College an immense dose

(it has been stated three pounds, in infusion,) has been given without any perceptible effect; at Exeter a much smaller quantity, not exceeding, I believe, 2 or 3 ounces, was infused in a quart of beer during the night, and in the morning given to a horse at one dose; immediately after taking it the animal fell down and died.

From considerations of this kind, the Author has been led to believe, that simplicity of prescription in veterinary as well as human medicine, may be carried too far; and that many useful medicines, and combinations of medicines, or receipts, may be improperly dismissed from the Veterinary Materia Medica and Pharmacopœia, were we to confide too much in the experiments that have been made on the healthy stomach, or attempt to form general rules or deductions from one, two, or three experiments, however carefully they may have been conducted. There is only one source from which any precise or really useful knowledge of this interesting subject can be derived; that is, a *careful and impartial observation, and an accurate recollection of the symptoms of diseases, and the effects of such medicines, whether simple or compound, as are employed for their removal.*

With respect to the names of the simple and compound medicines, the Author has for the most part employed those of the last London Dispensatory, by Thomson, 1830; but he has given also the older and more common names, and in such a manner as may make the general reader, or the young Veterinarian, familiar with both: for our medical nomenclature, even when founded on chemistry or botany, will probably be variable and uncertain. The Latin name of each medicine has, however, been given in every instance where it was

possible, in order to allow the reader to refer to the London Dispensatory, to which a Latin Index alone is affixed; but of course the officinal preparations to be found in that work are not inserted in the Veterinary Pharmacopœia, as many of those medicines which are administered to the horse in substance, are by physicians prescribed either in the form of decoction, infusion, or tincture.

It will also no doubt be remarked that many articles in this work treat of subjects not strictly belonging to Materia Medica; such are Bleeding, Diet, Firing, &c. To this objection I shall answer, that this volume is not intended as a guide to the veterinary practitioner alone, but to every horse proprietor in the kingdom; and as I consider that many diseases may be removed, and still more be prevented by a simple attention to diet, grooming, &c., I have deemed them not irrelevant to a work in which the practice of medicine is not attended to to the entire exclusion of every other subject.

To the critical and professional reader, some explanation may be necessary, to account for the repetitions that may be met with, the notice of articles not hitherto employed in veterinary medicine, and perhaps some appearance of inconsistency, such as prescribing *jalap* in the *compound cathartic receipts*, and, when noticing it as an article of the Materia Medica, asserting that it is useless as a cathartic, and ought to be dismissed from our Materia Medica. This was the Author's opinion until lately, and that opinion may still be correct; but upon reflecting on Dr Fordyce's opinion of the effect of medicinal combinations, and considering that jalap was generally prescribed, not only by the older English writers on farriery, Bracken, Gibson, &c., but by French

veterinarians of the present time, and having been informed that by adding jalap to Cape aloes, they were greatly improved, and rendered more certain in their effect, he was led to introduce the prescription, adding to it a small proportion of calomel. In one experiment, two drams of Barbadoes aloes with half an ounce of jalap proved moderately laxative. Cream of tartar was also an ingredient in the old cathartic prescriptions, and if triturated with aloes may modify and improve their action on the bowels, on some particular occasions, though not possessing any purgative power in the horse. This, therefore, can be desirable only in some particular circumstances, however useful it may have been found, as a more general ingredient in cathartics for the human body; for it cannot be employed with alkalies or soap; and experience has proved these to be the most useful addition that can be made to aloes as a horse medicine.

The public certainly is not sufficiently aware of the importance of the stomach in the animal economy, and how essentially necessary a healthy state of that organ is to the health, strength, and general condition of the horse. To preserve it in this state, and restore it when lost or impaired, should be a principal object, both with practitioners and proprietors; especially the latter, as they may thereby prevent a great part of the diseases by which they now sustain so much inconvenience, and suffer such serious losses. For a further view of this important subject, see vol. i. articles, Stable, Grooming, and vol. iii. Worms, Cough, Broken Wind, &c. With regard to the number of the formulæ, and the notice of articles not hitherto employed in veterinary practice, the Author hopes that some good may result from their

insertion, and the observations by which they are accompanied; and that one good quality of his book, its moderate size and price, will not be materially altered by it. The important object, the PREVENTION OF DISEASE, the Author, whenever an opportunity has offered, has earnestly endeavoured to recommend to the attention of horse proprietors, especially those whose business materially depends on the labour of this valuable and ill-treated animal; and he now once more seriously assures them, that to accomplish this desirable object, it is essentially requisite to afford them those comforts and indulgences which, as sentient beings, they are entitled to; not inflicting upon them unnecessary pain, nor working them in an immoderate and unreasonable degree; but treating them in every respect with kindness and humanity. In doing this, they will certainly promote their own interest as horse owners, and, in the Author's opinion, they will, at the same time, fulfil an important duty which every man owes to the brute creation.

The present edition has been very considerably enlarged by the addition of several new medicines, which have either been found to possess some power over the diseases of horses, or which, not having received a fair trial, on account of other drugs which exert a similar influence being habitually employed, may nevertheless, on some occasions, be administered with advantage. Whenever the properties of any medicine have not been accurately ascertained when given to the horse, its action on the human body has been noticed, and in very many instances, though certainly not in all, it will be found to operate similarly as a horse medicine.

An Index has been added for the benefit of those who

are unacquainted with the names of those drugs whose properties resemble each other. Thus, under the heads "Tonics," "Purgatives," &c., the reader will at one glance find every medicine contained in this work of a tonic or purgative kind. However, it has been impossible to include in the index every medicine noticed in the Materia Medica and Pharmacopœia, as it must be obvious that almost every medicine, except, perhaps, those denominated Narcotics, may be termed Stimulants, and therefore reference might be made under this head, with very few exceptions, to the whole work, without such reference being of the slightest utility. Again; those medicines classed under the denomination of Expectorants, although still allowed to retain that term, cannot be said to prove expectorant in the horse; nor can those called Sudorifics, although possessing the power of exciting perspiration in the human frame, be depended upon in the horse, as they very generally act as Diuretics, especially if the animal be exposed to cold. For this reason those medicines in general use, and whose properties have been well ascertained, are alone noticed in the index.

INTRODUCTION.

OBSERVATIONS ON THE MATERIA DIETETICA.

Writers on the Materia Medica have generally introduced their works by observations on the various articles of diet, which I think must be admitted to be a very useful method, when we consider how much more desirable it is to preserve health by attention to the prophylactic or preventive part of medicine, than to confine our studies to the curative part: the latter is painful, expensive, and uncertain; the former is painful only in apprehension; in practice it is most pleasant, as it invigorates the body and gives energy to the mind. It may appear an easy thing with regard to our domestic animals, having them so completely under our control, to confine them to that diet with respect both to quantity and quality, which is most useful. But, though many writers have suggested excellent rules for this purpose, and have clearly demonstrated the advantage that must result from their adoption, we still find the generality of horse proprietors and farmers very negligent in the management of their domestic animals, especially in regard to feeding.

Horses, as well as cattle, are naturally graminivorous animals, but the labour in which the horse is commonly employed, renders a stronger and more nutritious diet necessary. Still, if we wish to preserve the health of this useful animal, and obtain from him all the service he is capable of yielding, it is necessary to give him, every spring or summer, a course of his natural food, which purifies the blood, invigorates the muscular and nervous systems, and enables him to return to his labour with renewed spirit and strength. When this course of natural diet is accompanied with the cheering influence of pure air, and unrestrained exercise on the green carpet of nature, it is certainly most beneficial. There are circumstances, however, which render it sometimes more desirable to confine a horse to a small paddock, barton, or large airy box, and cut for him such green food as may appear most useful: this is termed *soiling*, and is certainly preferable for horses that are wild and apt to break over fences, and more especially for horses that have suffered from strains; or that, from having been kept in hot stables, are become too delicate in their skins to bear the cold fogs that may happen during the night, even in spring and autumn. This practice has now become very general with respect to hunters, who are only allowed green meat as physic during the summer, and are thereby in the winter found to be in much finer condition and capable of greater degrees of exertion than they would have been had they been turned to grass.

The inattention of the farmers of Great Britain to the improvement of pasture land has been truly amazing; but it is hoped that the attempts that have been made by some late writers may have the effect of turning their attention to a subject of such great importance. Some valuable remarks on natural and artificial grasses may be found in Mr. Sinclair's "*Hortus Gramineus Woburnensis*," (a work replete with instructive information upon this subject), and in the last edition of "The Complete Grazier."

It seems to be a general opinion, and certainly a very erroneous one, that pastures for horses cannot be too good, as if fattening the animal were the only object in turning him to grass. And even supposing this were the purpose, it would be useless or pernicious to put a horse into a luxuriant pasture, if his stomach were not capable of digesting all that his appetite would lead him to eat. This is demonstrated by the effect produced upon cattle when put too hastily into good pasture. But the horse is an animal that has been removed farther from a state of nature than horned cattle; he has too often been worked beyond his natural strength, and fed in such a manner as to require the utmost exertion of his stomach, in order to furnish materials for the repair of his body. Sometimes indeed he is left in the stable without exercise for several days, with a rack full of hay before him, and allowed to drink as much water as he likes. Sometimes we see him shut up in hot close stables, covered with thick

rugs, and fed chiefly on oats. All these departures from good management weaken the stomach as well as the whole body; and what can be more plain, than that to recruit the strength of a stomach debilitated by repletion, and repair the waste of a body that has been worn down or rendered infirm by the foul air of hot close stables and excessive exertion —what can be more plain, that in such cases the best remedy is pure air and an abstemious diet? Such horses should be put into short sweet pasture, where, in obtaining sufficient food, they are obliged to use a salutary degree of exercise, and in a situation where they can be sheltered from the sun and rain. When there is no convenience for turning a horse out, in order to get this annual course of natural food, we should adopt the best substitute that can be procured. A large airy box, or out-house, or a court, barton, or paddock, may answer the purpose; a loose box also possesses the advantage of not being infested with flies, which never fail to annoy a horse at grass and in very many instances keep him in low condition from the continued irritation they cause. Horses at grass too, by gallopping about in hot weather and then drinking largely of cold water, have very frequently become roarers, or have been attacked by cutaneous or other diseases. If a horse be kept entirely on green food, it should be given in such quantity as may be found most suitable to the state of his stomach. Vetches and lucern are perhaps the best vegetables for soiling.

horses, but common grass will answer the purpose when these cannot be had. I have seen lucern cause flatulent colic several times, though it was given mixed with hay, and the horses had been in the habit of eating it a considerable time. It was not till late in the year that it produced this effect, and this it did in two horses three times. The proprietor being convinced that it was the lucern which occasioned the disorder, gave no more of it, and since that time his horses have not had the colic. In some valuable instructions for the management of milch cows, which were drawn up by two of the most eminent veterinary surgeons in France, and printed by order of the French government, it is observed in speaking of lucern, "when cows are fed on lucern, and it is given before the flowers are open, or when covered with dew, or wet with rain, and before it has been exposed a short time to the sun, it often disagrees with cows, and blows or *blasts* them, as it is termed, in such a degree that they frequently die from it. This plant so far from being cooling, as some have imagined, is on the contrary of a very heating nature. It not only lowers the quality of the milk, but renders it in some measure unwholesome, and has been found when drank undiluted to make people hot and feverish. Dairymen have also found that, when pressed by the season, or by a want of other food, or when, from motives of economy, they have been induced to feed wholly on green lucern, and especially the after shoots, the cows have been affected with a trouble-

some disorder of the skin, which cracks and discharges an acrid humour, causing all the hair to fall off; and this is attended with such swelling and stiffness of the limbs, that the cows find it difficult to lie down or rise up again." (See "*Instructions sur la Manière de conduire et gouverner les Vaches laitières;" imprimées par Ordre du Gouvernement. Par MM. Chabert et Huzard.*

Pastures that are highly manured with stable dung, such as those in the neighbourhood of populous towns, are not considered the most desirable for horses; and I am inclined to believe that the pastures which produce the best food for milch cows are those which abound with the sweet-scented grasses, such as Dutch clover, &c. The stronger pastures may be favourable to the fattening of stock, but farmers often run a great risk in putting cattle into them too hastily. A short time since I was desired to examine some cows that died of a disorder which had proved very destructive on three or four farms, the pastures of which consisted of rich meadows, through which a river wound its course, and by which they were generally overflowed in winter. It appeared that this disease had not occurred so frequently as to attract particular notice till within the last four years; and that the first time it became so serious as to induce them to examine the dead animals, and reflect upon the disorder, was during a very hot and dry summer, and it was then attributed to a dead cow having been thrown into the river, and suffered to remain in some shallow part,

where it was washed, until it became highly putrid and offensive. Not only cows, but sheep, pigs, and horses, have died in these meadows, and in a manner which the inhabitants consider unusual. In every animal that had been opened for examination, they found the spleen or milt greatly enlarged, and, almost bursting with dark coloured fluid blood. This was the case with the three cows that I found dead, and examined when I arrived at the farm. But I found also the brain in a state of congestion, like that of an apoplectic subject, and some of its veins ruptured. The heart and lungs also were gorged with blood. It was evident to me that this disorder was caused by repletion, both of the digestive and sanguiferous systems. This state of the body makes an animal unwilling to move about, and disposes him to lie down and sleep. The cold fogs, which take place during the night in low situations, especially near rivers, would perhaps make such chilling impressions on the body, during the torpor of sleep, as would cause a sudden retrocession of blood from the surface of the body, and, consequently, a congestion in the vital organs. On describing this disease to a correspondent, he writes: "This disorder appears to be similar to one which attacked some stock in this neighbourhood a short time ago, except that in these there was certainly a violent inflammation of the lungs. Six out of seven that were attacked were cured by copious bleeding. They were feeding in a meadow which bounds the large brook, or river, that runs from Stone to Berkeley,

and which, about the fall of the year, or about latter-math time, is very subject to heavy fogs. I had an intelligent friend with me, who farms very largely, to whom I was reading your description, and he remarked that it was the same disease which they called meadow-sickness. He related an instance where his cows were turned into a capital piece of after-grass. When they had been feeding some time, he happened to go among them, and saw six that appeared ill, being very much disposed to vomit. He immediately drove them (all the stock) into very bare pasture, where there happened to be some mole casts, to which the six cows directly went, and began eating the dirt very greedily; so much so, that it appeared to him they could not get it down fast enough to satisfy themselves; after eating it a few minutes, they evidently got better, and were all very soon perfectly recovered: not one of the other cows offered to touch the dirt."

This circumstance shows how wonderfully animals are directed by an instinctive feeling to seek a remedy for their painful sensations, especially when the stomach is affected. In this case, it appears that they had fed greedily, and overloaded the rumen, or first stomach; in consequence of which, an acid liquor was engendered, which, flowing into the fourth stomach and small intestines, caused that painful irritation which led them to eat the dirt, which, no doubt, contained carbonate of lime (chalk) in sufficient quantity to neutralize the acid. This explanation seems to be confirmed by the result of

some experiments made upon rabbits. One rabbit was allowed to eat a small quantity of parsley, another was suffered to fill his stomach: they were killed a short time after, and examined. The stomach of the first rabbit had perfectly digested the parsley, but that of the second was quite full, the parsley but little altered, and an acid liquor was found in the beginning of the small intestines.

From the foregoing circumstances, it is evident that both horses and cattle may injure themselves by feeding without restraint in our highly manured pasures, and especially by feeding without limit in the stable, or barton, on the artificial grasses, such as clover, vetches, and lucern, or on roots, such as carrots, mangel-wurzel, potatoes, and parsnips.

It has occurred to me that, when cheese is the principal object of the dairyman, a pasture may be chosen different from that which would be desirable when the superior quality of the milk, cream, and butter were the object sought after. However this may be found, there can be no doubt, I think, that the most important improvements may be made by cultivating such grasses and herbs only as experience has proved to be most nutritious, and most wholesome: and, as to those which may be called medicinal, or condimental, it is surely better to cultivate them apart, when satisfied that they are necessary: my opinion, however, is, that they may be rendered unnecessary by a prudent use of the various articles of diet which the bountiful Creator of the universe has provided for all his creatures.

Having made such general observations on diet as may lead the reader to reflect seriously upon a subject which I consider of great importance, I shall proceed to a description of the various articles of medicine and diet in alphabetical order; comprehending, in this arrangement, the mode of preparing and exhibiting the various articles, the instruments employed for the purpose, as well as those for measuring, weighing, &c.; and, in short, every thing which has any relation to the subject. But, I think, it may be useful to make some observations on the advantage to be derived from giving wholesome water, both to horses and cattle. That we consider wholesome water necessary to our own health, ought, one would suppose, to be a sufficient argument for affording it to our domestic animals; nor is the circumstance of their being frequently found to prefer the filthiest water a sufficient proof of its being innoxious.

In the fourth volume of this Treatise upon Veterinary Medicine, I have related a remarkable circumstance, showing the importance of giving wholesome water to milch cows, which was communicated to me by the late Dr. Jenner, whose acquaintance and whose memory I cherish with sentiments of the highest respect, not only as being the greatest benefactor to the human race, but because he also thought it not beneath him to investigate the diseases of animals, and encourage those Veterinary Practitioners who exerted themselves in improving the veterinary art. I have

since heard of circumstances of a similar kind; but a case has been lately communicated to me which places the subject in a much stronger light. Mr. Bacon, of Wells, having occasion to haul lime on a distant part of his farm, reserved a piece of old grass for his working oxen, in which was a pond of water, reputed the best in the parish. Soon after putting them into the pasture, they were all attacked with scouring, upon which they were removed to another piece of very sweet pasture, where there was no water, so that it was still necessary for them to drink at the pond above referred to; having drank they were taken back to another field; the scouring continued; they were again changed to another field. Mr. Bacon thought it clear that the pasture was not the cause of the disease; and, contrary to the advice of the farmers, who affirmed that the spring was always noticed for the excellence of its water, fenced his pond round breast high, so that the cattle could not drink of the water, and they were driven to a distance to drink. An evident change now took place, the scouring gradually ceased, but the cattle did not recover their strength for a considerable time. Mr. Bacon now proceeded to examine the suspected pool; and on stirring the water, to use his own expression, it appeared to be all alive, from myriads of frogs, newts, tadpoles, and other reptiles inhabiting it. In order to destroy them, he threw into the pond two quaterns of fresh lime, and stirred the water thoroughly; soon after, an immense number of

these reptiles were seen dead on the surface; and when, about three days after, the pond was raked and cleansed, there were three wheel-barrows full of them taken out.

In about a fortnight, the cattle were replaced in the same field, together with other young stock, which drank of the water of the pond, and without any injurious effects being experienced; the water since that time has been very good, and never infested with the reptiles, which had evidently caused so much mischief. I have reason to believe that the worms which infest the bowels, both of men and of animals, are sometimes derived from the water they drink. In a village on the side of Mendip, where the water that is commonly drank, though proceeding from an excellent spring, runs in an open gutter through several fields before it comes to the village, I had opportunities of seeing a great deal of the diseases of the inhabitants, and found there was scarcely a family where the grown people, as well as the children, were not troubled with worms. Many of them had voided tape-worms, and a worm I had never seen before, or read of. The other intestinal worms were likewise very common, especially ascarides. I had an opportunity of examining many horses, cattle, dogs, and cats, after death, in this village, and at a kennel within a short distance of it, and in almost all of them have found the new kind of worm I have just spoken of, besides the more common intestinal worm. There were but two or three wells in the village, which were in the houses

of opulent people; and those who had not this advantage, and were particular in their choice of water, sent to the spring for it; but almost all the inhabitants used that which ran into the village. Now it is remarkable that the former were free from worms, while a very large proportion of the latter were troubled with them. Since my residence at Wells, I have examined a great number of horses and other animals after death, and find very few that are free from the new kind of worm before mentioned. This worm has been seen in a small stream that runs through the village of Easton, near Wells; so that it is clearly an inhabitant of running streams, as well as of the bowels of men and of animals. Though small and quite flat, it appears from the different colours it is found of, to suck both blood and chyle. The inhabitants of the village first noticed called it the blood worm. I am satisfied, for my own part, that the best water both for men and for animals, is that which is drawn or pumped from wells, provided the wells be kept clean. I have seen a cast-iron pump which worked as smoothly as possible; and these pumps are certainly preferable to every other kind. All dead vegetable matter tends to corrupt water and make it unwholesome; wooden pumps and troughs are therefore injurious to water. An experienced dairy farmer near Mendip, who had dug wells on his farm for the purpose of watering his cows, declared that were he to pay ten shillings a week for the labour of pumping the water, it would be more profitable for him than

to suffer his cattle to drink from the stagnant ponds on his farm. The circumstance related in vol. iv. is a proof of the truth of this assertion; and it is evident from the facts related of Mr. Bacon's cattle, that not only ponds filled by rain water, but even the best springs, are liable to become injurious to animals from containing an accumulation of reptiles.

The diseases of horses and cattle from this and from every other cause, have been amply noticed in the last, and in the first and third volumes of my treatise on the Veterinary Art. The reader will also find a very full account of the origin and treatment of disease in horses, sheep, and cattle, together with much information upon every subject connected with the horse, in my Veterinary Dictionary.

WEIGHTS AND MEASURES.

THE measures employed in medicine are of two kinds, one for solids, the other for liquids. But there are some fluids much heavier than water, such as Sulphuric Acid and Goulard's Extract; and there are others much lighter, such as Ether and Alcohol, or Spirit of Wine; such liquids are, therefore, sold by weight. Formerly a drop was the smallest liquid measure; this being found very variable, depending upon the size and form of the vessel from which the liquid was dropped, upon the density of the liquid, and other circumstances, a more correct and convenient method has been established. For this purpose a small glass measure is made, in which the dram, or sixty grains, is divided into sixty parts, which are named minims; it is therefore named a minim glass, and the term minim is substituted in prescriptions or receipts for drops.

Liquid Measure.

	Medical character.		
60 minims	M.	minim ..	1 dram
8 drams	ʒ	dram	1 ounce
16 ounces	℥	ounce	1 lb. or pint
2 pints or lbs.	℔	pound....	1 quart
4 quarts......	qrt.	quart	1 gallon.

The Latin word Octarium is sometimes used for pint, and Congius for gallon; Cyathus, a tea-cup full; Cochleare Magnum, a table-spoonful or about half an ounce; Cochleare Medium, a dessert-spoonful or about 2 drams; Cochleare Minimum, a tea-spoonful, or 1 dram.

Dry Measure.

	Medical character.		
20 grains......	gr.	grain......	1 scruple
3 scruples	℈	scruple	1 dram
8 drams......	ʒ	dram......	1 ounce
12 ounces	℥	ounce	1 pound
	℔	pound	

M. or Manipulus, signifies a handful.

P. or Pugillum, the 8th part of a handful.

In reading French medical or veterinary books, some difficulty is experienced in bringing their measures to correspond with ours, in consequence of their having adopted a decimal division, both in their liquid and dry measure, and they also appear to feel a similar inconvenience from the difference between the old and the new division of measure. For example; in Thomson's London Dispensatory, the French gramme is stated to be equal to 15·444 grains, or about 15 grains and a half. Dr. Nysten, in his Dictionnaire Medicale, makes the gramme amount to 20 grains; and in Bourgelat's Matière Medicale, by Huzard, it is stated to be equal to 18 grains. There appear to be some errors in Dr.

Thomson's Tables, and it is equally clear, that neither Nysten or Huzard are correct. The following table of French medical weights is from Nysten's French Medical Dictionary.

				New Names.
Livre, the pound	℔	Equal to	12 oz.	Hectogrammes $3\frac{1}{2}$
Once, the ounce	℥	Equal to	1 dr.	Grammes 32
Scrupule, the scr.	℈	Equal to	20 gr.	Gramme 1
Grain	G	Equal to		Centigrammes 5

12 oz. are equal to $3\frac{1}{2}$ hectogrammes, new weights.
1 ounce . . . . . . to 32 grammes
1 dram . . . . . . to 4 grammes
1 scruple . . . . . to 1 gramme
1 grain . . . . . . to 5 centigrammes.

There is an obvious error in this table; for if one gramme is equal to one scruple, four grammes must exceed one dram. If, therefore, four grammes are equal to one dram, one gramme can only be equivalent to fifteen grains, instead of a scruple or twenty grains. The following tables are also taken from Nysten's Dictionary.

Old Measures.		*New Measures.* Decilitre.	Centilitres.
1 poisson	125 grammes,	or 1	2
1 demi setier .	250	or 2	5
1 chopine	500	or 5	0
1 pinte	1000	or 1 litre 0	0

New Measures. *Old Measures.*

	Grammes		lb.	oz.	dr.	
1 Centilitre, equal to	10	or	0	0	½	about a spoonful (cuillereé)
1 Decilitre	100	or	0	3	1	about ¾ of a poisson
1 Litre.............	1000	or	2	0	3½	a little more than a quart.

In Crabb's Technological Dictionary, the French litre is stated to be equal to the 35th part of an English bushel, which contains 8 gallons or 32 quarts.

In Nysten's last table, 1 centilitre is said to be equal to 10 grammes, or half a dram. This is a considerable error; for if the gramme be taken only at 15 grains, 10 grammes would amount to 150 grains, or 2 and a half drams.

VETERINARY

PHARMACOPŒIA.

ABIETIS RESINA. See Burgundy Pitch.

ABLUENTS (from *abluo*, to wash away). Medicinal liquids, or water slightly impregnated with mucilage, such as bran tea, or white water, linseed tea, or decoction of marshmallows, which are supposed to wash away or carry off gradually any noxious matter there may be in the stomach or bowels, the biliary or urinary passages, or the blood.

ABSINTHIUM. See Wormwood.

ABSORBENTS. Medicines that absorb or neutralize any acid matter there may be in the stomach or bowels. Of this kind are potash, soda, magnesia, chalk, common clay and earth; the two last owe their absorbent properties to the carbonate of lime they contain. (See these different Articles. See also my Farriery, vol. iii. 8th edition, Article, Digestion; and vol. i. 15th edition, Article, Diseases of the Urinary Organs. See also the introduction to this volume, where a case is related of animals being led by an instinctive feeling to eat earth as an absorbent.) The formation of acid in the stomach depends on some derangement of that important organ, which is brought on by the improper quantity or quality

of the animal's food. It will be to little purpose, therefore, to give medicine to absorb the acid, unless the state of the stomach be corrected, which cannot be done without avoiding the cause which disordered it. This morbid state of the stomach, and consequent formation of an acid in it, is very common among horses, and is indicated by a disposition to eat earth or drink muddy water, especially when it is rendered turbid by clay or chalk; and for want of these they will gnaw or lick the walls of the stable, or the dirt from their stalls, or eat their litter. This state of the stomach appears to be brought on by eating too much hay, especially when the hay is indifferent or bad; and this propensity to eat too much hay is acquired gradually, by keeping young horses idle in the stable with a rack full of hay before them, and allowing them too much water; also by irregular feeding, that is, keeping them fasting too long, and then giving them as much as they choose to eat and drink; or by giving them bad hay, and an insufficient quantity of oats, or bad oats as well as bad hay; exposing the animal to cold and wet, when heated and fatigued by exercise, will disorder the stomach, and immoderate work will do the same. In whatever manner this morbid condition of the stomach is brought on, it must be obvious, after what has been said, that absorbent medicines can only act as palliatives, and as such they are certainly useful. It is advisable, however, to give in the first place a mild dose of physic. If good hay cannot be procured, some good

straw may be substituted for it, and a mash of fresh sweet bran, or pollard, by some named *gurgings*. When new or musty oats are the cause of the disease, and better cannot be had, they should be dried on a malt kiln: or some barley that has been boiled or steeped for 20 or 30 hours in water may be given. The farinaceous or saccharine roots, such as potatoes, parsnips, mangel-wurzel, or carrots, may be found useful, especially if cooked by steam. Though an improvement in diet is the remedy to be mainly relied upon for restoring the stomach to health, there are other circumstances to be attended to, which may hasten or assist in the cure. Pure air, regular exercise, assiduity and kindness in the groom, and the society of other horses, will greatly exhilarate the animal's spirits, and thereby improve the digestive function. When the season is favourable, a run at grass in short sweet pasture is perhaps the most effectual remedy of all.

Though animals are led by instinct to eat dirt and drink muddy water, in order to allay the irritation caused by an acid in the stomach, much mischief has sometimes arisen from allowing horses to indulge such an appetite. Mr. Feron states, that many fatal attacks of colic have been produced by horses eating earth or sand when at camp, as it accumulates and forms large balls in the bowels; that he has opened horses that died from this cause, and found nearly two buckets of sand in the cæcum and colon (the large bowels). Hard stones of considerable size are sometimes found in horses' bowels, most commonly

in millers' horses. I have seen one that weighed eight pounds, and I think there is one in the Museum of the Veterinary College, that weighs ten pounds. Cattle that are tied up during the winter often acquire a propensity to lick up earth; they also, as their coats become loose on the approach of spring, are frequently licking themselves, and often swallow a great deal of hair, which is formed into balls in the stomach, and sometimes occasions serious disorders. I have known a great number of these balls discharged by the droves of cattle that pass through Oak-hill, towards Benegar Fair, in Whitsun week; some of them as large as a man's fist. Calves, when fattening, are often fed so injudiciously, as to bring on serious disorders of the stomach. This organ in the calf, and probably in all animals, has the property of coagulating milk; but when it is disordered by being overloaded with milk, or by drinking stale milk, or milk from a cow that has a bad udder, an acid appears to be formed in the stomach, which sometimes coagulates the milk suddenly, and forms it into hard indigestible curds, similar to cheese; I have known calves and lambs die from this cause. It is a common practice with farmers, to give young lambs chalk, mixed with barley or oatmeal, when fattening them. This certainly does some good, by correcting the acidity of the stomach, but still they are often affected with either diarrhœa, or costiveness, and loss of appetite, and sometimes with colic and convulsions. It would be much better, therefore, in fattening calves, to adopt

a practice more conformable to nature. (See vol. iv. or Compendium of Cattle Medicine.)

Absorbents.

The cheapest absorbent, and perhaps as effectual as any, is a small knob of common clay (not pipe clay), worked up with each pail of water that is given.

No. 1.	Subcarbonate of soda	2 to 4 dr.
	Ginger	1 dr.
	Columbo root, powdered	2 to 4 dr.
	Mix for one dose.	
No. 2.	Prepared Chalk	4 dr.
	Gentian root, powdered	2 to 4 dr.
	Aromatic powder	1 to 2 dr.
No. 3.	Aloes	3 dr.
	Rhubarb	3 or 4 dr.
	Subcarbonate of soda	2 or 3 dr.
	Ginger	1 to 2 dr.
	Treacle enough to form the ball.	

Remark.—Nos. 1 and 2, are absorbent and stomachic, and may either be given in a little gruel, water, or beer, as a drench, or made into a ball with treacle. Should there be no convenience for giving either of these, the horse would probably swallow them with his food or water, especially if the bitter powders were omitted.

No. 3 is a gentle purgative, as well as absorbent

and stomachic, and is that which should be preferred when a horse can be spared from his work for a day or two. The receipts No. 1 and 2 may be repeated daily as long as it is necessary; and at an interval of a week or ten days the purgative may be repeated.

ACACIA CATECHU, commonly, but improperly, called Terra Japonica, or Japan Earth, and Catechu, or more properly Extract of Catechu, is obtained from the inner dark-coloured wood of an Acacia tree, which grows plentifully in the mountains of Kankana, in Hindostan, and flowers in June. The wood is boiled in water, and when strained off and boiled down to one-third part, is set in a place to cool for one day, and afterwards the evaporation is completed by the heat of the sun. There are two varieties of this extract; one brought from Bengal, the other from Bombay. The latter kind is of a pale reddish-brown colour, and is generally in small square cakes; the other is in round masses, of a deep chocolate colour internally, with the hue of rusty iron on the outside; it is heavier than the pale, its specific gravity being generally about 1·39, possesses more astringency, and should therefore be preferred. Catechu is a powerful astringent and tonic, and is given in obstinate diarrhœa, as the scouring of cattle, and in diabetes, or excessive staling. I have given it also with good effect in bloody urine. In the two latter diseases, I have given it with opium, ginger, and sometimes with alum; and in the first with allspice, caraway-

seeds, and ginger, simmered in half a pint of table beer, and afterwards mixed with half a pint of good ale, or strong beer. The dose of catechu is from 1 to 4 drams. I am inclined to think it would be found a useful tonic, in habitual or constitutional weakness of bowels; that is, in horses that scour from any unusual exercise, or upon drinking cold water; also in cases of general debility. Alkaline salts destroy the astringent powers of catechu, and metallic salts form with it insoluble compounds.

ACACIA VERA.—*Gummi.* Gum Arabic. This gum is procured from the bark of a species of mimosa, which is very common in Egypt, and Arabia Petræa. Several other trees also produce it, and it is remarkable that the barks of those trees from which it is obtained are extremely bitter. Cherry and plum trees are an instance of this. There are two principal sorts of gum Arabic, one procured from the Levant, another from the East Indies. The latter is the darkest, is not so readily soluble in water, and forms a thicker mucilage than the former. The mucilage of acacia is formed by gradually adding half a pint of boiling water to four ounces of the gum in powder, until they form a mucilage. Although it exerts no specific action upon the system, still it is extremely useful as a demulcent, forming, as it were, a coat which shields those parts through which it passes from the action of acrid substances. It is prescribed in inflammation or irritation of the fauces and alimentary canal, and in painful affections of the urinary organs.

ACETATE. A salt formed by combining acetic acid or pure vinegar with an alkali, an earth, or a metallic oxide. There are several acetates used in Veterinary Medicine, each of which will be noticed under its respective name.

ACETATE OF AMMONIA.—*Ammoniæ Acetas.* This preparation was formerly named Minderus's Spirit, and is made by adding distilled vinegar to carbonate of ammonia in powder, until it ceases to produce effervescence or boiling. Acetate of ammonia has been prescribed as a diaphoretic in a dose from 4 to 8 ounces.

ACETATE OF COPPER.—*Cupri Acetas.* This was formerly named crystallized verdigris, and distilled verdigris. It is composed of the oxide of copper and acetic acid. It is sometimes employed finely powdered as an escharotic to cleanse foul ulcers, and has been used with success as a remedy for quittors. (See vol. i.)

ACETATE OF LEAD AND SUBACETATE OF LEAD.—*Plumbi Acetas et Subacetas.* The first of these is made by mixing one pint of strong acetic acid (vinegar) with a pint and a half of boiling distilled water, and then adding gradually one pound of subcarbonate of lead. The solution is then to be filtered through paper and evaporated until a thin pellicle appears on its surface, when it may be put by in order that crystals may form. These, after pouring off the water, are to be dried upon blotting paper. The second is made by mixing together two pounds of semi-vitrified oxide of lead and one

gallon of diluted acetic acid. These are to be boiled down to six pounds, being constantly stirred, after which they may be set aside to allow the fæces to subside, and afterwards strained. The super-acetate of lead is commonly named Sugar of Lead and the liquid subacetate, Goulard's Extract of Lead They are both used in making cooling lotions, or eye waters, sometimes simply dissolved in water, at others with the addition of vinegar and spirit of wine, or camphorated spirit. Sugar of lead has been given internally; but I consider all the preparations of lead not only unnecessary, but dangerous as internal remedies, though one very large dose may be given without any perceptible effect. Animals have often been poisoned by grazing in the neighbourhood of lead mines; this is well known in the parish of Wookey, near Wells. The disease thus produced is there named *mindering;* or rather the animals so affected, are said to be *mindered.* (See my Veterinary Dictionary and vol. iii. of my Farriery.)

ACETIC ACID and ACETOUS ACID.—*Acidum Aceticum; Acidum Acetosum.* See Acids and Vinegar.

ACIDIFICATION. A natural or artificial operation, by which an acidifiable substance, becoming saturated with oxygen, acquires the property of an acid. The acidified substance is called the *base,* and its name designates the particular acid of which it forms a part. Thus, the base of sulphuric or carbonic acid is sulphur and carbon.

ACIDS. All substances, whether solid or liquid, which have a sour taste, are termed acids, although it by no means follows that all acids are sour; prussic acid, for instance, is not so. Most acids are composed of oxygen, in combination with a combustible base, and when several acids have the same base, united with different proportions of oxygen, the name of that which contains the larger portion terminates in *ic*, while that of the one combined with the smaller quantity ends in *ous*; thus nitric, nitrous; phosphoric, phosphorous; sulphuric, sulphurous; &c. Acids possess the property of changing the blue juices of vegetables into red, and of readily combining with alkalies, earths, and metallic oxides, forming with them various kinds of salts, which are used in medicine. Of this kind are the preparations commonly named Glauber's salt, Epsom salt, blue and white vitriol, sugar of lead, &c.: each of these will be noticed under its respective name. Acids are divided into three classes; viz. mineral, vegetable, and animal acids. The mineral acids used in veterinary practice are the sulphuric, the nitric, and the muriatic. Of the vegetable only two: viz. the acetic, or acetous acid, commonly named vinegar; and the tartaric acid, or rather the combination of it, with a small proportion of potash, which is named cream of tartar: no other acids are employed.

ACID, ACETOUS OR ACETIC.—*Acidum Acetosum vel Aceticum.* A strong acetic acid is now very commonly obtained from wood, by distillation in iron cylinders. When all the acid and other volatile

parts have been expelled, there remains in the iron cylinder the best kind of charcoal. The liquid is at first very impure, and commonly named pyroligneous acid, but by another process it is purified, and becomes a pure and powerful acetic acid. It has of late been much used for medical as well as culinary purposes. For veterinary purposes, common vinegar will do very well. Hot vinegar is sometimes used as a fomentation for deep-seated strains; it is used also with water as a cooling lotion; sometimes it is employed with the addition of crude sal ammoniac (muriate of ammonia) and spirit of wine; it is seldom given internally. Mr. James Clark relates a case of a horse dying immediately after being drenched with a pint of vinegar. Combined with water it forms an excellent lotion for washing out small particles of lime from the eye.

ACID, MURIATIC.—*Acidum Muriaticum.* Commonly called spirit of salt. This is sometimes used externally as a mild caustic, and is an excellent agent in neutralizing putrid miasmata. When united with earths, alkalies, or metallic oxides, it forms *muriates.* Muriatic acid is now denominated hydrochloric acid, or hydromuriatic acid, the real acid contained in the liquid preparation being composed of equal volumes of chlorine and hydrogen. It is a powerful caustic.

ACID, NITRIC AND NITROUS.—*Acidum Nitricum et Nitrosum.* Both these are powerful caustics. The first is limpid or colourless, and transparent like water; the nitrous acid is of a dark

yellow colour, and gives off suffocating fumes of a deep yellow colour on opening the bottle in which it is kept. Some useful external applications are made from nitrous acid, especially nitrate of silver or lunar caustic, and nitric oxide of mercury or red precipitate. Sweet spirit of nitre, now named spirit of nitrous ether, is made by the distillation of nitric or nitrous acid (for there is but little difference in their medicinal properties), and alcohol or spirit of wine. It may be given to the horse in doses of from half an ounce to an ounce. Its chief action is that of a gentle stimulant to the stomach, diuretic and carminative. It may therefore be advantageously used in some cases of flatulent colic. That very useful acid named nitre, is composed of nitric acid and potash. When nitric or nitrous acid is diluted with an equal quantity of water, it forms *aqua fortis*. Nitrous acid or aqua fortis should be kept in a bottle with a glass stopper, as a cork is soon destroyed by it. When quicksilver or copper are dissolved in nitrous acid, they are employed as remedies for the foot rot in sheep, or the canker in horses, either alone or diluted with water, or they may be mixed with hog's lard, provided the latter be first melted, and the mixture stirred until it becomes cold. Nitric acid forms *nitrates*, when combined with the alkalis, earths, or metallic oxides.

Acid, Sulphuric.—*Acidum Sulphuricum.* Vitriolic acid, or Oil of Vitriol. This is the strongest of the mineral acids, and a very powerful caustic. It was formerly made by distilling green vitriol, or

copperas (sulphate of iron), and then named vitriolic acid; it is now made from sulphur, and therefore named sulphuric acid. Sulphuric acid is sometimes used as a caustic in canker of the horse's foot; it is sometimes mixed, or rather combined, with oil of turpentine, and forms with it a blackish liniment, which, when mixed with hog's lard, is sometimes used to disperse callous tumours; and this, by adding some powdered cantharides to it, forms a strong blister (see Blisters); and, by the addition of sulphur, a good mange ointment. Sulphuric acid (in a small proportion, such as a few drops to an ounce) will unite, by shaking, with olive oil, and form a good stimulating liniment; and when mixed with tar in the proportion of from 1 or 2 ounces to the pound, it forms an excellent application for bad thrushes and canker of the foot. For internal use sulphuric acid is sometimes mixed with spirit of wine, and in this mixture spices, such as cinnamon and ginger, are steeped. This preparation was formerly named Elixir of Vitriol, and new Aromatic Sulphuric Acid. A spirit of vitriol is kept in the shops, which is nothing more than sulphuric acid diluted with seven or eight times its weight of water. Sulphuric acid mixed with alcohol, and distilled, forms that powerful medicinal preparation named Ether. It forms neutral salts, named *sulphates*, when combined with the alkalies, earths, and metallic oxides; thus, with soda, it forms sulphate of soda, or Glauber's salt; with magnesia, sulphate of magnesia, or Epsom salt; with copper, sulphate of copper, or blue vitriol; with zinc, sulphate of zinc, or white vitriol; and with iron, sulphate of

iron, salt of steel, or green copperas. When pure, sulphuric acid should be as colourless and transparent as water.

Acid, Tartaric. See Tartar.

Acid, Vitriolic. See Acid, Sulphuric.

ACONITUM. Wolfsbane. Common Monkshood. This is a perennial plant, which flowers in July, and is a native of the Alpine forests, and of the mountains of Germany. Its properties are narcotic, diaphoretic, and diuretic, but it loses most of its medicinal qualities by being dried. It has been fairly tried on horses in this country and in France, and found to be extremely deleterious. M. Collaine, a veterinary professor at Milan, has given it to horses affected with farcy, in the large dose of one ounce and a half daily. It distressed the animals extremely, without producing any good effect upon farcy sores. Being satisfied of its inefficacy as a remedy for the disease, as well as of its deleterious quality, it was discontinued, and the poor animals were killed. Mr. Coleman gave it a trial, and was so satisfied, after a few experiments, of its being merely a poison with regard to the horse, that he has never repeated the experiment.

ACORUS CALAMUS. Sweet Flag. This is found in most parts of Europe, growing in marshes or streams of water. It flowers in May and June, and is an excellent stomachic. Its dose in powder is from one to two ounces, mixed with bran or honey; in infusion from four to six ounces may be given with two quarts of water.

ADEPS. Hog's Lard. Lard is emollient,

and is chiefly used in the composition of ointments. If long exposed to a warm air it attracts oxygen from the atmosphere, for which it has a strong affinity, and becomes rancid.

ÆGYPTIACUM. See Egyptiacum.

ÆRUGO. See Verdigris.

ÆTHER. See Ether.

ÆTHIOPS. See Ethiops.

AGARICUS.—*Boletus Ignarius.* Agaric. A fungus found on the decayed trunks of the ash and the oak. It was formerly used as a styptic, but modern practitioners place no confidence in it.

AIR. As the health of horses materially depends upon the salubrity of the air in which they are kept, it is probable that many of their diseases arise from the little attention that is paid to the ventilation of stables. It is said that even the *glanders*, a fatal and contagious disease, has been generated by confining horses in an impure air. It is a common practice with grooms, particularly those who fancy themselves profoundly skilled in the art of farriery, to stop every crevice they can find in the stable, so that pure air is with difficulty admitted; and the noxious vapours arising from the litter, from perspiration and respiration, are in a great measure confined. Horses thus situated must necessarily suffer in a greater or less degree; and though the air may not be so contaminated as to occasion fatal diseases, it is sufficiently so to debilitate the constitution, and thereby lay a foundation for numerous complaints, as well as to create local diseases, such as

inflamed eyes, obstinate coughs, and perhaps *moon-blindness*, as it is termed. Horses that have weak eyes and lungs are sure to be injured by this treatment. Another inconvenience arising from it is that of rendering a horse very susceptible of cold. *Ventilation* is, therefore, an object of great importance in the construction of stables; and is most conveniently obtained by making proper apertures in the ceiling, communicating with the external air; or by means of windows, adapted to the form and size of the stable. It is a bad method of ventilation to leave the upper parts of the racks open, so as to communicate with the roof of the building, as a current of air is thereby produced in a stall, over the horse's head. The litter should not be suffered to remain in the stall during the day, but be removed to some open place and well shaken, that the ammoniacal vapours it affords may be thoroughly dissipated. Should it be necessary for a horse to lie down in the day-time, he should be allowed fresh straw. (See vol. i.)

ALCOHOL.—*Spiritus Rectificatus.* Alcohol. Rectified Spirit. This is obtained by the distillation of fermented liquors, in a diluted state; it is afterwards rectified or concentrated by a second or third distillation more gradually conducted, and with less heat. Alcohol is extensively employed in medicine, chiefly in making tinctures; with an equal quantity of water it forms proof spirit (*spiritus tenuior*) the most usual form in which it is employed. The strength of alcohol is sometimes

judged of by shaking the spirit, and observing the length of time the bubbles thus created on its surface remain; but this is a most uncertain criterion. Another method is to pour a few drops of it upon gunpowder, in order to ascertain whether it is capable of making it explode; but, if it be not strong enough to do so, this experiment affords no certain data for judging of its strength. A simple mode of determining the relative degrees of strength possessed by spirits, is to take a phial capable of containing 500 grains of distilled water. Rectified spirit of equal bulk should weigh 418 grains, and proof spirit 465. Proof spirit, either in the form of brandy, rum, or gin, or made into a cordial tincture, by having some spices or bitters steeped in it, is sometimes given to horses as a cordial or carminative, when fatigued before they arrive at the end of their journey, or when seized with the fret or gripes. From 2 to 4 or 6 oz. diluted with water, are the doses generally employed. If a horse is unaccustomed to this cordial, or to beer, a small dose will generally be sufficient. When we consider that the excitement produced by cordials, especially diluted spirit or beer, is only temporary; that it causes a greater flow of nervous power or animal spirit towards the stomach in particular, and likewise to all the muscular system, it must appear evident that it has a tendency to weaken the sensorium or brain, as is proved by the excitement it produces being always followed by more or less depression in the stomach, and all the organs of the body, according

to the degree of excitement that has been produced. From this consideration it is obvious that we should be cautious in the use of spirituous cordials, and not give stronger doses than are necessary. It is not an unusual thing to give two bottles (about a pint) of Daffy's Elixir, a tincture made with proof spirit, at a dose; sometimes undiluted, and even mixed with pepper. Half a pint of gin, and two ounces of pepper, is not an unusual dose with stable-men for gripes or fret, and as it often cures the disease they think nothing of the consequences. Mr. Bracey Clarke recommends four ounces of a tincture of allspice, made with proof spirit, as an excellent remedy for the gripes or fret; and such I have no doubt it is, especially if made with old brandy. Mr. Causer, an experienced veterinarian, in a work lately published, has related some cases, in which he produced the desired effect, by a much smaller dose of a spirituous tincture than I have ever known given. It consisted of a mixture of compound tincture of bark, and compound tincture of gentian, in equal parts. Of this, he says, "I ordered a *dessert-spoonfull* (about two drams) to be given twice a day in a small quantity of water. Scarcely an hour after he had taken the first dose, he began to eat some hay, and on the next day he ate every thing that was offered him. I only allowed him to get two doses of it. After this, I ordered a quart of cold boiled milk to be given him every morning and evening; by these means, together with the good care of the coachman, he re-

covered his strength." For two days before the tincture was given, he could scarcely get the horse to take food of any description, though he was giving him a dram of aromatic powder twice a day. I have been assured by a veterinary surgeon, that he once cured a horse of gripes by a dose of hot water; and it is by no means unlikely that a warm infusion of some of our medicinal herbs, such as peppermint, penny royal, rosemary, &c. would be found effectual, especially if a glass of gin were added to it. I have experienced the good effect of giving a horse a little brandy and water when fatigued, and off his feed during a journey; it generally restores the appetite, and enables him to finish his journey with comfort. It is a common practice, I believe, with druggists, and probably with some apothecaries, to make all their spirituous tinctures with a proof spirit made at the time, by mixing together equal parts of spirit of wine and water. This is a very different thing from *good* brandy, rum, or gin, which cannot be good or fit for medicinal use, unless it has been kept a sufficient time for all its constituent parts to become intimately blended; when it becomes an excellent cordial, of a homogeneous and peculiar kind. Spirit of wine is a poison, and, however diluted, is injurious to the stomach. I once made some raspberry-brandy, as I thought, in a new and expeditious manner; that is, by mixing some raspberry-jam with a mixture of spirit of wine and water. I drank a little of this many times, and at different periods both alone and diluted, and its effect upon the stomach was as different as can be imagined from

that of good spirit, or good raspberry-brandy. All tinctures for internal use should be made with old French brandy, which is universally allowed to be preferable as a cordial for weak stomachs, to rum, gin, or Hollands; brandy being simply stomachic, rum heating and sudorific, and gin diuretic. (See Cordials, Carminatives, Stomachics, and Tonics.)

ALE. See Beer.

ALKALIES. *Alkalies* form one of the classes of saline bodies, and are of three kinds: 1st, The *vegetable alkali*, kali, or potash. 2d, The *mineral alkali*, soda or natron: and the *volatile alkali*, or ammonia. Each of these will be described under the following heads, *potash*, *soda*, and *ammonia*; which names are employed by the London College of Physicians. *Alkalies* are distinguished by their changing blue vegetable colours to a green, and yellow to orange; by combining rapidly with acids, and forming with them neutral salts (see Acids); and by rendering oils miscible with water. (See Emulsions and Soap.) The *vegetable* and *mineral alkalies*, from not being evaporable, except in a high degree of heat, were termed *fixed*: and *ammonia*, being evaporable in a low temperature, obtained the name of *volatile alkali*.

ALKANET ROOT.—*Anchusæ Tinctoriæ Radix*. The best species of this root is imported from France. It is used for imparting a beautiful red colour to oils, ointments, and plasters, and to preparations of alcohol and ether.

ALKOHOL. See Alcohol.

ALLIUM CEPA. See Garlic.

ALLSPICE.—*Pimentæ Baccæ.* Jamaica pepper, a powerful cordial and carminative; the dose from two to three or four drams. Mr. Bracey Clarke, in a book he has published on flatulent or spasmodic colic, or gripes, strongly recommends a tincture of allspice in proof spirit, as an effectual or sovereign remedy for that disorder. The dose about 4 to 6 oz. in water. (See vol. i.)

ALOES.—*Aloë.* This is the inspissated juice of certain plants of the same name, and the most effectual purgative for horses we are acquainted with. It is of an intensely bitter taste, and of a strong unpleasant odour.

The different sorts of aloes are distinguished by the names of the places whence they are brought.

SOCOTRINE ALOES is brought from the island of Socotra, in the Indian Ocean, and is supposed to be more safe in its operation than the other kinds. It is of a dark reddish or yellowish-red colour, quite opaque, perfectly soluble in alcohol or water, and has a less disagreeable smell than the others; when reduced to powder it is of a bright yellow colour; it sells at a high price, and is therefore not unfrequently adulterated. I have been so often disappointed in the effect of *socotrine aloes*,* or rather what is commonly sold under that name, that I now always use the *Barbadoes*,† which cannot so easily be adulterated without detection.

* In December 1805, *Socotrine Aloes* was at about the same price or cheaper than *Barbadoes*.

† In 1823, *Barbadoes Aloes* was very scarce, and sold at from 10

Barbadoes or Hepatic Aloes is brought from Barbadoes, and has been generally considered as a rough medicine, very liable to produce griping, and other unpleasant effects; but I have always found it a safe and efficacious purgative. *Barbadoes aloes* is of a darker colour than the former kind, not so clear and bright, less brittle, and of a stronger and more disagreeable smell. It is certainly more active than the *Socotrine*; and, as far as my experience goes, more certain in its operation: nor have I ever found it produce those dangerous effects that have been attributed to it, when given in a proper dose, and when the horse is not neglected during its operation and properly prepared for it (see Cathartics): indeed, every kind of aloes is liable to produce even fatal consequences if given too largely, or if the horse be treated improperly while under their effect. There is a peculiarity in the horse's intestines which renders them more liable to be injured by purgatives of every kind, than those of any other domestic animal: cathartic medicines should therefore be always prepared by persons of judgment and experience.

Cape Aloes is rather transparent, and very brittle: it is easily powdered, in which state it is of a bright yellow colour with a greenish tint; the odour arising from it is not so strong as the *Barbadoes*, but rather stronger and less agreeable than the *Socotrine*. This kind is sold at a much lower price

to 12 shillings per pound; *Barbadoes Aloes* is now prescribed by many Physicians, and often used by Apothecaries.

than the others, but is so weak and uncertain in its effect, that it is seldom employed in veterinary medicine. The dose of *socotrine aloes* is from five drams to nine; *Barbadoes*, from four drams to six; and of the *Cape*, from six to ten drams.

Aloes generally operate more speedily when joined with *soap* or either of the *fixed alkalies*. (See Alkalies.) In the old books on farriery, cream of tartar is generally prescribed with aloes, under a supposition that it prevents griping; but I consider it by no means proper, and have for some time preferred soap and the alkalies, such as potash and soda; but soap is by far the most convenient. (See Cathartics.)

Aloes is sometimes given as an alterative in the dose of one or two drams. It is also an ingredient in *Friar's balsam* and *compound tincture of myrrh;* preparations often used by farriers. (See Vulneraries, Alteratives.)

ALTERATIVES are medicines that act very gradually upon the constitution, and therefore require to be continued for some time. The medicines most commonly used as alteratives in farriery are antimony, nitre, sulphur, resin, and Æthiop's mineral; these are generally given together, particularly the three former. The cases in which alteratives are commonly employed, are diseases of the skin, such as mange and other itching humours, hide-bound and dry, staring coat. They are given also in swellings, or humours of the hind legs, thrushes, and worms. They appear to do good, by

increasing the discharge of excrementitious matter from the body, through the various emunctories or outlets, such as the bowels, the kidneys, and the skin. From viewing the subject in this light, I have been induced to arrange them under three heads, viz.: laxative alteratives, diuretic alteratives, and diaphoretic alteratives. Were we to confine ourselves strictly to the common acceptation of the term alteratives, we should describe them as medicines, which cure diseases by a gentle, slow, and insensible operation upon the body; and under this impression, it would appear unnecessary to watch the effect which such preparations produced upon the body. This would be a departure from the precept which I have offered in the Preface; viz.; "there is only one source from which any precise or really useful knowledge of this interesting subject (Veterinary Medicine) can be derived; that is, *a careful and impartial observation, and an accurate recollection of the symptoms of diseases, and the effects of such medicines, whether simple, or compound, as are employed for their removal.*" By attending to this rule, I have observed that the medicines given as alteratives have generally some visible effect upon the bowels, the kidneys, or the skin; the division of them, therefore, into laxatives, diuretics, and diaphoretics, will be found useful in practice.

Laxative Alteratives are useful in many cases, and may often be substituted for *purgatives* with great advantage.

When a horse is troubled with worms, and is too weak to take strong medicines, or when he cannot be spared from his work, they are extremely convenient, and generally beneficial. In obstinate cases of *grease*, and in chronic inflammation of the eyes, they often do good; they are generally serviceable also in coughs of long standing, or even when they are recent, if not caused by strangles, in which disease the throat is often so much inflamed, and so very sore, as to render the exhibition of medicine by the mouth improper. Clysters, however, are often beneficial in those cases.

In short, there are few medicines of more general utility in the diseases of horses than the laxative alteratives, the most effectual of which is *aloes*, in the dose of two or three drams, with an equal quantity of Castile soap.

Diuretic Alteratives are composed of *nitre*, *resin*, *soap*, and *turpentine*. They are employed in swellings of the legs and other parts, or as a preventive, in horses that are subject to such swellings; and they are given also to improve the coat and general condition of the animal.

Though not so effectual in some cases as the preceding, they are certainly very convenient and innocent, and produce so little disturbance in the body, that a horse may continue his work while taking them, without the least danger, even in the winter season. Nor is there any trouble in giving them; as a horse readily eats them, when in the form of a powder, with his corn. The *laxative alterative*

has not this advantage, the aloes, of which it is composed, being extremely bitter, and therefore requiring to be given in the form of a *ball.*

Diaphoretic Alteratives are composed of medicines that act on the skin, gradually increasing the insensible perspiration, and giving a smoothness and gloss to the coat. The most effectual medicines of this class are the preparations of *antimony* (see Antimony); but these may be rendered more efficacious by being joined with other medicines, such as cordials, camphor, opium, &c.

The complaints in which this kind of *alterative* is most useful, are those termed *surfeit* and *hide-bound;* they are also employed to remove an undue determination of blood to any internal organ, or to diminish general plethora.

Diaphoretic alteratives seldom prove effectual, unless assisted by exercise and good grooming. (See Dressing; also vol. i.)

The alteratives recommended by writers on farriery were not composed according to the distinction we have here made; but laxatives, diuretics, &c. were mixed with little discrimination; thus, as we have before observed, antimony, nitre, sulphur, and resin, formed their general alteratives; and when it was required to remove diseases, supposed to arise from obstruction in the blood-vessels, some ponderous medicines were prescribed: among these were cinnabar, and Æthiop's mineral.

ALTERATIVES.

Laxative.

No. 1.	Barbadoes aloes	10 to 12 dr.
	Castile soap	1½ oz.
	Caraways, or aniseseed, powdered................	1½ oz. or 2 oz.
	Ginger	½ oz.

Syrup or treacle enough to form a mass, to be divided into four balls, one of which is to be given daily until the bowels are opened.

No. 2.	Barbadoes aloes	10 to 12 dr.
	Calomel	2 to 4 dr.
	Caraway seed powdered	1½ oz.
	Ginger	4 dr.
	Oil of cloves	40 drops.

Mix as above for four doses, and give one daily until the bowels are opened. While taking these balls the horse must have mashes, and the chill taken off his water; he should not be exposed to the cold, but have moderate exercise.

No. 3.	Sublimed sulphur	6 oz.
	Tartarized antimony	6 dr. to 1 oz.
	Calomel	3 dr.

Mix and divide into six doses, one of which is to be given daily. In obstinate cases of mange or other diseases of the skin, corrosive sublimate in a dose of from five to ten grains may in very bad cases be substituted for the calomel: the form of a ball is then the best.*

* According to Dr. Paris, in his Pharmacologia, sublimate is de-

DIURETIC ALTERATIVES.

No. 1. Yellow resin, and nitrate of potash, of each .... 4 oz.

Mix and divide into six or eight parts, one of which is to be given daily in the horse's corn, until a diuretic effect is produced.

No. 2. Yellow resin .... 4 oz.
Spanish soap .... 3 oz.
Venice turpentine .... 2 oz.

Powdered caraways enough to form the mass. To be divided into balls of a moderate size, one to be given daily until a diuretic effect is produced.

No. 3. Powdered nitre .... 4 oz.
Resin and flour, of each .... 2 oz.

Treacle enough to form the mass. To be divided into balls of a moderate size, and given as above.

DIAPHORETIC ALTERATIVES.

No. 1. Levigated sulphuret of antimony .... 2 dr. to 1 oz.
Caraway seeds .... $\frac{1}{2}$ oz.
Mix for one dose.

No. 2. Precipitated sulphuret of antimony .... $\frac{1}{2}$ dr.
Antimonial powder .... 1 to 2 dr.
Powdered caraways .... $\frac{1}{2}$ oz.
Mix for one dose.

composed by tartarized antimony; this decomposition, however, may not take place in the stomach: and as the medicine is given in the form of ball, and has been found efficacious, it is a consideration of no importance.

No. 3.	Antimonial powder	2 dr.
	Camphor	$1\frac{1}{2}$ dr.
	Flour	3 dr.

Syrup enough to form the ball for one dose.

No. 4.	Tartarized antimony	1 to 2 dr.
	Camphor	1 to 2 dr.
	Liquorice powder	3 dr.

Syrup enough to form the ball.

Diaphoretic medicines are very uncertain in their effect upon the horse, and unless great care be taken of the animal with respect to grooming, exercise, diet, and clothing, little benefit is to be expected from them. Opium has been prescribed, with camphor, tartarized antimony, ammonia, and other stimulants, for the purpose of relaxing the skin and producing perspiration ; but there is often danger in giving such medicines, especially when there is any degree of fever present : the medicines prescribed in the above receipts are innocent if they fail in affecting the skin, as in such cases they are generally determined to the kidneys, and cause an increased discharge of urine, especially if the horse be not warmly clothed. (See Diaphoretics, Febrifuges or Fever Ball, Sudorifics, Opium, &c.) Many other medicines have been prescribed as alteratives, by Veterinary writers, among which are Æthiop's mineral, cinnabar, guaicum, kermes mineral, cream of tartar, the neutral salts, &c. To these may be added one which has often been found more efficacious than all the rest, that is, soiling in the stable on vetches,

or tares, lucern, &c. or a run at grass. (See vol. i. Stable Management, 15th edition.*)

ALTHÆA. See Marsh Mallows.

ALUM.—*Alumen.* A saline body, composed of *sulphuric acid*, and *alumine*, or pure clay, and *potash.* It is used internally as an *astringent* in *diarrhœa, diabetes, red-water,* &c. in doses from half an ounce to an ounce, or more, and is generally joined with *bitters* and *aromatic stimulants,* such as *gentian, cassia, aniseed, caraway seed,* &c. For external purposes *alum* is very useful: it is a good remedy for the *grease,* when dissolved and applied to the diseased parts; when burnt, as it is termed, it becomes an excellent remedy for cleansing foul ulcers, for which purpose it is often mixed with sulphate of copper or red precipitate. By briskly stirring a small piece of alum with the white of an egg, a coagulum is formed, which, in some cases of relaxation after ophthalmia, may be applied to the eye between two pieces of thin rag or gauze with advantage. (See Escharotics.)

* The effect of alteratives in cutaneous diseases is sometimes only temporary; this is accounted for when we consider how little attention is paid to the cause of such diseases. If improper feeding be the cause of those disorders, how can any permanent benefit be expected from medicine, unless that error is corrected? Too much even of good hay and oats, especially when the animal is permitted to drink freely, will gradually induce a disordered state of the digestive organs; hence arise a morbid, voracious, or depraved appetite, and a disposition to eat even foul litter. From this cause proceed not only diseases of the skin, but also chronic cough, asthma, or broken wind, roaring, and worms; even the ascarides found in the arteries are thus engendered.

Burnt Alum is made by putting any quantity of alum in an iron ladle, or common firepan, and keeping it over a gentle fire, until its watery parts are evaporated, and it is converted into a light and easily pulverizable substance. If exposed to a strong heat for some time, the alum is decomposed, and of course useless.

AMALGAM. The combination of mercury with any metal is termed an amalgam.

AMBER.—*Succinum.* This is what naturalists term a *bitumen.* It affords only one preparation that is used in veterinary practice,—an essential oil, of a dark colour, and very disagreeable odour,—which is employed as an embrocation in strains, bruises, &c., generally mixed with other oils, such as *oil of elder*, *turpentine*, &c. It is given internally as an antispasmodic, in doses from two drams to half an ounce or more. For medicinal purposes this essential oil is rectified, whereby it becomes of a lighter colour, and loses in some degree its unpleasant smell; but it does not appear to be rendered more efficacious. There is a *salt of amber* kept in the shops, procured from *amber* by sublimation, but it is never used in veterinary practice.

AMMONIA. This is the modern term for what is named *volatile alkali,* and is procured either from bones or sal ammoniac. It is kept in the shops both in a solid and a liquid form. Strictly speaking, *pure ammonia* exists only in the form of *gas* or air: but water will absorb a considerable quantity of this air; and when saturated with it

becomes a violent stimulant, capable of inflaming, and even blistering, the skin. This is termed *liquor* or *water of*, or *solution of pure ammonia*, or *strong spirit of sal-ammoniac*, and is useful in dispersing indolent tumours, if mixed with an equal quantity of sweet oil, and oil of turpentine, in which camphor has been dissolved. *Liquor of pure ammonia* is too strong for internal use; but when *ammonia* is, by a chemical process, combined with *carbonic acid*, or fixed air, it assumes a solid form, and is rendered sufficiently mild for that purpose. In this state it is named *carbonate of ammonia*, or *prepared ammonia*, *volatile sal-ammoniac*, or *smelling salts*, being much used for smelling-bottles, as its quick pungent odour is well calculated to remove faintness. Ammonia is invariably produced during the natural or artificial decomposition of organized bodies.

Carbonate of Ammonia.—*Ammoniæ Carbonas*. This is stimulant, antacid, and cordial, and is given in doses from half a dram to two drams.

When carbonate of ammonia is dissolved in water to saturation, it forms *water* or *solution of mild ammonia*, or *common spirit of sal-ammoniac*; when distilled with spirit and some aromatic oils, *spirit of sal volatile*, or *compound spirit of ammonia*: and if *assafœtida* be added, the *fœtid spirit of ammonia* is produced, which is sometimes given as an antispadmodic. (See Assafœtida.)

The Salt and Spirit of Hartshorn are nearly the same as the *carbonate*, and the *solution* or

water of ammonia; but being distilled from bones, or stag-horns, which are of the same nature, they are slightly impregnated with *animal oil*, which gives them a peculiar smell, and is supposed to increase their antispasmodic power. (See Antispasmodics.)

AMMONIACUM; Ammoniac. This is divided into two sorts. The first is of a yellowish colour, interspersed with small pieces of wood, and other extraneous matter: the other, in small pieces or drops, of a whiter colour than the former, and much more pure; this is commonly called *drop ammoniacum*. The former, however, may be employed for veterinary purposes, making a little allowance in the dose for the extraneous matter it contains; but this may be in a great measure separated by pounding and sifting.

Gum Ammoniac is an expectorant (see Expectorants), in doses from two or three to four drams. It is advantageously joined with powdered squills, and in some cases with camphor, balsam of tolu, opium, and balsam of sulphur.

Horses that are of a full habit, should be bled, and take a cathartic ball previously to the exhibition of expectorants, which renders them more efficacious. It may be proper to observe that *ammoniacum* is never to be employed in recent coughs, arising from *catarrh*, or cold, but only in the *chronic* kind, that are not dependent on inflammation. (See vol. i.)

AMMONIATED COPPER, or AMMONI-

ARET OF COPPER, formerly Ammoniacal Copper. Edin.—*Cuprum Ammoniacum.* This preparation is made by rubbing together in a glass mortar sulphate of copper, four drams, and sub-carbonate of ammonia, six drams. When the effervescence which will take place has ceased, wrap it up in some blotting paper, and dry it with a gentle heat. It is considered as a powerful tonic in human medicine, but has not, I believe, been tried in veterinary practice. (See Tonics.)

AMOMUM CARDAMOMUM.—*Semina.* See Cardamom Seeds.

AMOMUM ZINGIBER. See Ginger.

AMYLUM. See Starch.

AMYRIS. See Elemi.

ANCHUSA. See Alkanet.

ANETHUM. See Fennel.

ANGELICA.—*Angelica.* This root is largely cultivated for medicinal purposes. Its properties are tonic and carminative. Although a very elegant aromatic, it requires to be conjoined with some other stimulants when admistered to the horse. The dose is from half an ounce to an ounce and a half.

ANGUSTURA BARK. Cusparia Bark. *Cuspariæ Cortex.* This tree is a native of South America. Its taste is bitter, slightly aromatic, and imparts to the throat a pungent taste and sense of heat. By distillation with water, a small quantity of a white essential oil may be obtained from the bark. This is said to be a good tonic and stomachic medicine; and is often employed by medical prac-

titioners in cases where the Peruvian bark does not agree with the patient. It does not appear to be necessary in veterinary practice, and is very rarely used.

The dose is from half an ounce to an ounce or more.

ANISE-SEED, or ANISEED.—*Anisi Semina.* This seed is much used in horse medicine, as a stimulant carminative and cordial; but its power is by no means considerable. It is thought to possess also an expectorant quality, and is therefore given in coughs and other complaints of the lungs, but is generally joined with other expectorants. It is certainly, though weak, a very grateful stimulant, and does much good where the stomach is weak, and disposed to flatulency; it is therefore an useful ingredient in cordial medicines. The dose is about one ounce or rather more. (See Cordials and Carminatives.) The virtues of anise-seed are contained in its essential oil, the dose of which is about half a dram or more: it may be rubbed in a mortar with sugar, mucilage, and ginger, and given in warm ale or water.

In the human being anise-seeds are supposed to increase the secretion of milk; but I am not aware that they possess this power over animals.

ANODYNES. Medicines that alleviate or remove pain, the most effectual of which is opium. The other narcotics have also been occasionally employed for this purpose, among which are henbane, deadly nightshade, hemlock, white poppy-

heads, &c. In horses, pain often depends on inflammation or obstruction in the bowels or other passages; in such cases anodynes, or rather narcotics, are injurious; but when pain depends upon spasm, as in the flatulent or spasmodic colic, commonly named gripes or fret, it is an excellent remedy. (See vol. i. article Colic.) In that dangerous complaint, named locked-jaw, opium is the medicine that is principally relied on, though it is generally given with others, such as camphor, assafœtida, &c. (See vol. i.; also Antispasmodics, Opium, Henbane, &c.)

ANODYNE BALL.

No. 1.	Opium................	from ½ dr. to 1 dr.
	Castile soap...............	2 dr. to 4 dr.
	Powdered ginger...........	1 dr. to 2 dr.
	Powdered anise-seed........	½ oz. to 1 oz.
	Oil of caraways.............	½ dr.
	Syrup enough to form the ball.	

ANODYNE DRAUGHT, OR DRENCH.

No. 2.	Tincture of opium	from ½ oz. to 1 oz.
	Spirit of nitrous ether	1 oz. to 2 oz.
	Essence of peppermint	1 to 2 dr.
	Water....................	1 pint.

ANODYNE CARMINATIVE TINCTURE.

No. 3.	Best Turkey opium	1 oz.
	Cloves, bruised	2 oz.
	Jamaica ginger, bruised	3 oz.
	Old Cogniac brandy	1 quart.

Keep them together in a well-corked bottle three or four weeks, frequently shaking it. The dose two or three ounces in water.

The ball may be mixed with warm ale, if the form of a drench be preferred to that of a ball, and either of the receipts will be found a good remedy for the flatulent or spasmodic colic. In the anodyne draught warm beer may be substituted for water. It should be recollected that when the colic is attended with costiveness, clysters and oily and saline laxatives are necessary, either in addition to the anodyne, or after the anodyne is exhibited. (See vol. iii. 8th edition.) Essence of peppermint consists of the essential oil of peppermint dissolved in spirit of wine: one part of the former to three of the latter. (See Essence and Mint.) Anodynes are sometimes exhibited in the form of clyster, as in locked-jaw, when no medicine can be given by the mouth, which often happens in bad cases; it is then necessary to employ about a double dose, or rather more. (See Locked Jaw, vol. i. 15th edition; see also Clysters, vol. ii.) Anodyne fomentations are prescribed occasionally, which consist chiefly of a decoction of white poppy-heads. (See Fomentations.)

ANTHELMINTICS are medicines that destroy worms, or expel them from the intestines. The mercurial purgatives are generally considered the most effectual anthelmintics.

A variety of vegetables have been thought to possess this quality, but I believe without founda-

tion: among these are box, rue, savin, and wormwood. Æthiop's mineral, antimony, sulphur, and tin, have also been considered as *anthelmintics.* I believe tin has not been fairly tried: and as it is an efficacious anthelmintic in dogs, it may probably be found useful in horses. Of all the mercurial preparations, *calomel* is by far the best for this purpose, and may be given with aloes, soap, and some aromatic oil, with a little ginger. Many prefer giving the calomel at night, and the purgative the following morning. Aloes is a good *anthelmintic.* A saline substance was some time ago introduced from India, as a remedy for that species of worm termed *botts.* It seems to be composed of common salt and liver of sulphur, but does not appear to deserve the high character that was given of it; though, like salt or brine, it may sometimes have been found an effectual *anthelmintic.* (See vol. i. and iii.)

It has been supposed, that worms are sometimes generated in consequence of debility in the digestive organs. Tonics have therefore been recommended, particularly the vegetable bitters; such as bark, wormwood, camomile, &c. When worms are discovered in the horse's dung, after a fair trial has been given to mercurial purgatives (especially if he appears to be weak, and incapable of much work), it would be adviseable to give tonic and cordial preparations, with a generous diet: but whenever this is done, there must be proportionate exercise. One plan of treating a horse with worms is to keep him

fasting for several hours, and then give him a small quantity of milk and sugar, which is to be followed by a dose of the anthelmintic in a liquid form: a solution of common salt has been recommended for this purpose, to which may be added two or three drams of aloes. The dose of salt is about four ounces, in three pints of water. Oil of turpentine has of late been recommended as an anthelmintic, and has, I believe, been found more efficacious than any other medicine. The mode of given it is to keep the horse without food for several hours, and then to give four ounces mixed with a pint or more of oatmeal gruel: the day before the horse is to take about three drams of aloes, with an equal quantity of soap, in order to open the bowels moderately, and so that they may be in a loose state at the time the turpentine is given. Some caution is necessary in adopting this method, as in two cases that have come to my knowledge, the stomach appeared to have been dangerously affected, and in one it produced a degree of inflammation that proved fatal. In one of the cases the turpentine was given undiluted when the stomach was empty. In the second, the horse was kept fasting a long time, I believe twelve hours; in the third, which proved fatal, the purgative given the day before appeared to have been too strong. I would advise, therefore, when oil of turpentine is given as an anthelmintic, that the horse be prepared with bran mashes, as for physic; that only three drams of aloes, with an equal quantity of Castile soap, be given the day

before the turpentine, and that when the latter is given, the stomach should not be in so exhausted a state by fasting as it appears to have been in one, if not all of the above cases. Perhaps a small bran mash may be given, about six or seven in the morning, and the turpentine about eleven or twelve. May it not be worth while to try a mixture of castor oil, or linseed oil, and oil of turpentine, as an anthelmintic? A run at grass, in May or June, has been found a good remedy for worms; soiling in the stable with vetches, or tares, lucern, &c. may also be tried. (See vol. i. article Worms, 15th edition.) I have lately discovered a cause of worms which is not generally, if at all, known. Since I have resided near the Hill of Mendip, I have frequently met with a kind of worm in the bowels of horses, dogs, and cats, which I never before saw, nor can I find a description of it in any book. It is found generally in the small intestines near their termination, and sometimes in the large bowels also. They adhere pretty firmly by one of their extremities, to the mucous membrane of the bowels, and when contracted appear like a flake of whitish mucus, but when extended they are quite flat, like a very narrow ribband, and are covered with transverse lines like the leech worm. They are from one to three or four inches in length. I think I have found them of greater length in the bowels of dogs than in other animals. The extremity by which they adhere has a bulbous appearance, with a mouth and other minute apertures. The other extremity is square, as

if cut off transversely. I have known these worms discharged from the bowels of a man who brought one of them to me; he called them the blood worm, and said he had often voided them, especially after drinking rather freely of beer. These worms have been seen in a small stream which runs through a village near Mendip.

ANTHELMINTICS.

No. 1.	Aloes...............	4 to 6 dr.
	Castile soap.........	3 dr.
	Oil of cloves	10 drops.
	Calomel.............	1 to 2 dr.
	Ginger..............	1 to 2 dr.
	Syrup enough to form the ball for one dose.	
No. 2.	Aloes...............	4 to 6 dr.
	Powdered tin.........	3 to 4 dr.
	Castile soap..........	3 dr.
	Oil of cloves	10 to 20 drops.
	Ginger..............	1 to 2 dr.
	Syrup enough to form the ball.	
No. 3.	Common salt.........	4 oz.
	Aloes...............	2 dr.
	Water..............	1 qt.
No. 4.	Oil of turpentine.....	4 oz.
	Oatmeal gruel.......	1 pint.
No. 5.	Oil of turpentine.....	4 oz.
	Castor or linseed oil..	8 oz.
	Gruel...............	8 oz.
	Mix for one dose.	

A larger proportion of aloes is generally prescribed by farriers and druggists; but such strong doses are injurious, and sometimes fatal. (See Cathartics and Physic.)

As worms in horses generally arise from bad management and improper food, by which the digestive organs are weakened, no permament good can be expected from medicine, unless that error be corrected. Wholesome food, therefore, in proper quantity, or in proportion to the animal's labour, is essentially necessary, in order to eradicate worms from his bowels, and restore him to a state of health and good working condition.

ANTHEMIS. See Camomile.

ANTIMONY.—*Antimonium*. This is a heavy, shining, brittle mineral, somewhat like black lead when powdered, but of a darker colour. It is common in Germany and France. A small quantity is found in Cornwall, but not sufficiently pure for medicinal purposes.

Antimony is composed of a metallic substance termed *regulus of antimony* and *sulphur*. It is given as an alterative, in doses of an ounce or more, to improve the coat and condition of horses: some give it to destroy worms; but it does not appear to possess much power of that kind. A variety of useful preparations is made from antimony, many of which are more efficacious than the mineral itself; among these are *antimonial powder*, which is said to be the same as *James's powder*, *emetic tartar* tartarized antimony), *kermes mineral*, or *precipi-*

tated sulphuret of antimony, oxide of antimony, &c. The most useful preparations are the tartarized antimony, commonly named emetic tartar (see Emetic Tartar), antimonial powder, and the sulphuret, or common antimony, such as is sold under the name of antimony; but this should be finely powdered or levigated, or prepared in the way chalk is. When antimony is thus brought to an impalpable powder, a smaller dose will be sufficient, and its effect will be much more certain. To these may be added the precipitated sulphuret of antimony, though it is seldom employed, except as an alterative. As a fever medicine tartarized antimony and antimonial powder are certainly preferable to every other preparation, and are those most commonly employed. Other preparations are occasionally used by farriers, such as liver of antimony, glass of antimony, antimonial wine, powder of algaroth, &c., most of which names are now exploded. There is another fluid preparation which is often employed as a caustic, formerly named *butter of antimony*, but now muriate of antimony. This has been found useful in foul ulcers of the foot or other parts, such as canker, quittor, and farcy buds, or ulcers. The dose of tartarized antimony is from one to two or three drams; and, though a powerful emetic in the human stomach, does not appear to excite nausea in the horse; but given largely is more apt to affect the kidneys or bowels. It is considered, by veterinary practitioners, as a safe and effectual fever medicine. The common dose is about 1½ dram or 2 drams.

Some practitioners, however, prefer the antimonial powder, as being milder and more effectual; but I believe they are both perfectly innocent in the dose commonly employed; and joined with nitre, certainly produce a good effect as an auxiliary to that important remedy, bleeding. (See Febrifuges, or Fever Medicines.) Both tartarized antimony and antimonial powder are occasionally joined with camphor as a fever medicine, and sometimes, but not often, with opium. (See Sudorifics.) The sulphuret of antimony is inert, unless it meet with an acid in the stomach.

ANTISEPTICS are medicines which prevent putridity, or remove it if already begun. The most efficacious are *bark* and other bitters; *opium*, *wine*, *ether*, *ammonia*, and *camphor*.

Horses do not appear to be subject to those fevers which, in the human system, are termed putrid; so that these medicines are not required. However, as in putrid fever, it is certain that the presence of very offensive fæces in the alimentary canal will prove a source of great irritation to the system; and it may also here be remarked, that the urine, if retained for any considerable time, will have a similar tendency to create irritation and consequent distress. Antiseptics are nothing more than cordials and tonics, and are as improper for the horse as for man during the febrile stage. They can only be serviceable when debility remains *after every symptom of fever has vanished.* (See Cordials and Tonics.)

ANTISPASMODICS are medicines which pos-

sess the power of allaying inordinate or painful motions in the system, particularly those involuntary contractions in parts which are naturally subject to the command of the will.

Medical writers divide *antispasmodics* into two kinds; viz. stimulants and sedatives. To the former belong arsenic, preparations of copper, zinc, and iron: also ammonia, ether, essential oils, &c. The latter comprehend opium, musk, camphor, Valerian, and all the vegetable narcotics.

Medicines of the fœtid kind, such as galbanum, assafœtida, &c. have also an antispasmodic quality.

When spasm arises from irritation, *sedatives* are to be given; but when it depends merely on debility, *tonics* are evidently proper. The spasmodic complaints to which horses are liable, are locked jaw and spasmodic or flatulent colic, commonly named gripes or fret, in which the most efficacious antispasmodic is opium; but it is generally joined with others, such as camphor, assafœtida, ether, oil of peppermint, juniper, caraways, allspice, or other aromatics. (See vol. i. of my Farriery, 15th edition.)

The spices and aromatic seeds, such as cinnamon, cloves, ginger, caraways, anise-seed, &c., are often joined with opium, either in powder or infused with it in proof spirit, to form a tincture, and will be found a good antispasmodic in that form.

APERIENTS. Opening medicines. (See Laxatives and Cathartics.)

AQUAFORTIS. Weak nitrous acid. (See Acid, Nitrous.)

ARABIC, GUM. See Acacia Vera.

ARBUTUS.—*Uva ursi.* Whortleberry, Bearberry, or Trailing Arbutus. This shrub is a native of the northern parts of Europe, and is found growing in a wild state on the heaths and mountains of Scotland. It flowers in June, and should be gathered in Autumn, the green leaves alone being taken and dried by a gentle heat. The principal property of Uva ursi is astringent. It is given to man in ulcerations of the urinary organs, as the kidneys or bladder, and has been strongly recommended in cases of phthisis pulmonalis. It may likewise be exhibited in most fluxes arising from debility, as mœnorrhagia, fluor albus, diabetes, &c. I am not aware that it has yet received a sufficient trial with regard to the horse; but am inclined to think it might be found serviceable in many cases of relaxation of the solids. In chronic diabetes I should feel much tempted to make use of it. It may be given in substance in doses of from half an ounce to an ounce three times a day. It may be detected in the urine three quarters of an hour after its administration.

ARGENTI NITRAS. Nitrate of Silver. Lunar Caustic. A very powerful escharotic. This is generally used for destroying the exuberant fungous growths from ulcers. It is also employed in a liquid form, for the purpose of injecting sinuous sores, and stimulating indolent ulcers or wounds. It is occasionally prescribed as a tonic and antispasmodic for man; but, I believe, is seldom, if ever, administered

internally to the horse. (See Caustics and Escharotics.) Of course, when used as an escharotic or stimulant it will require to be diluted with different proportions of water.

ARISTOLOCHIA SERPENTARIA. Virginia Snake-root. Birthwort. This plant is a native of North America. Its properties are stimulant, diaphoretic, and tonic, and its dose from half an ounce to an ounce every four or six hours.

ARMORIACIÆ RADIX. Horse-radish. See Horse-radish.

ARNICA. Mountain Arnica. German Leopard's Bane. The leaves and flowers of this shrub, which is a native of the northern parts of Europe and America, are of singular service in man, in cases of paralysis, rheumatism, &c. Their general properties are narcotic, stimulant, and diaphoretic. I have never made any trial of this medicine on the horse, but am inclined to think it may be of service in cases of paralysis of the bladder, and amaurosis. It may be given in substance, in doses of from two scruples to a drachm and a half twice or thrice a day; or a pint of an infusion, made by macerating a dram and a half of the leaves and flowers in twelve ounces of boiling water, and straining through linen, may be daily administered. An over-dose of this medicine is said to prove cathartic and nauseating.

AROMATICS. Stimulants that possess an agreeable odour, such as cinnamon, cloves, &c.

Aromatic Confection.—*Confectio Aromatica.* This is made by triturating together, until reduced

to a very fine powder, two ounces of cinnamon bark, two ounces of nutmegs, the same quantity of dried saffron, one ounce of cloves, half an ounce of cardamum seeds, and sixteen ounces of prepared shells, and then gradually adding one pint of water, mixing the whole until thoroughly incorporated. The combinations of aromatics are stimulant, cordial, and carminative, and, if not thought too expensive, may be given to the horse, in the dose of from half an ounce to an ounce, dissolved in warm ale. It is a common custom to administer cordials to horses after hunting or undergoing any great degree of fatigue; but it should be remembered that there are limits to this practice, and that when undue action is excited, whether in the stomach or any other organ, it is invariably followed by proportionate depression.

Aromatic Electuary.—*Electuarium Aromaticum.* This is made by beating together two parts of syrup of orange and one part of aromatic powder.

Aromatic Powder.—*Pulvis Aromaticus.* Take of cardamum seeds, ginger, and cinnamon bark, equal parts. Rub them down to a very fine powder, and keep in a well-stopped phial. This is a good cordial powder, and may be given in a dose of two or three drams in warm ale, in such cases as require the use of cordials. For veterinary purposes, the following composition is, I think, preferable :—

VETERINARY AROMATIC POWDER.

Powdered caraway seeds	6 oz.
Powdered allspice	4 oz.
Jamaica ginger powdered	2 oz.
Liquorice powder	2 oz.—Mix.

The dose from 6 to 8 drams.

If the form of a ball is preferred, it may be obtained by beating up a dose of the powders with a little treacle.

ARROW-ROOT. See Starch.

ARSENIC.—*Arsenicum.* There are two preparations of arsenic that are principally made use of in veterinary practice: and these are the *white arsenic*, or *oxide of arsenic*, and the *yellow arsenic*, or *sulphuret of arsenic.* The latter is a combination of white arsenic and sulphur, either natural or artificial, varying in colour according to the proportion of sulphur, which, when considerable, gives it an orange or red colour; it is then called *Realgar*, and used as a pigment only.

White arsenic is obtained in the process of roasting certain ores. The arsenic sublimes, and is collected in chimneys adapted to the purpose. It is beautifully white, and very heavy, but easily reduced to a powder. The powdered arsenic of the shops is generally adulterated, and ought never to be depended upon. The practitioner should always buy it in the lump, and either powder it himself, or see it done.

White arsenic has been considered a good tonic for horses; and, though a violent poison in the human system, may be given to these animals with safety. From its tonic quality it has suspended, or apparently cured, the glanders; but its effect in this way, I believe, is never permanent. It is prudent to begin with a small dose—from 2 to 8 grains. This may be gradually increased, and continued as long as it does not occasion irritation of the stomach or bowels, or bring on vertigo. When any symptoms of these complaints manifest themselves the use of arsenic should be immediately discontinued. In experiments on glandered horses, I have seen a dose of two drams given twice a day, and continued for a week; at which period it produced inflammation of the bowels. I have even known 2 drams given for two or three days successively, without any violent effect; it will sometimes, however, occasion great disturbance in the stomach and bowels, in much smaller doses, and if continued without carefully watching its effect, may do great mischief.

Though arsenic has been often given by way of experiment to glandered horses, even in large doses, without producing any violent effect, yet cases have occurred where moderate or even small doses have occasioned considerable disturbance in the stomach and bowels. In one case I have known it produce a fatal inflammation of the stomach in a moderate dose; the groom having persisted in the use of it after the injurious effect which it sometimes produces had taken place. When arsenic disagrees with

the stomach it causes loss of appetite, shivering, dejection, uneasiness in the stomach and bowels, which gradually increase, unless it be discontinued; in such cases castor oil, oatmeal gruel, and infusion of linseed, should be given. When castor oil cannot be procured, linseed oil may be substituted for it, or olive oil. Perhaps the most efficacious antidote to the effects of arsenic is lime water, which forms with the arsenic arseniate of lime, an insoluble, and consequently an innocuous, substance. Chalk and water is likewise a good antidote to arsenic, and, where this cannot be obtained, one part of common soap may be dissolved in four of water, by weight, and given in large quantities.

In reviewing the experiments that have been made with arsenic, it does not appear that it has ever done any good in glanders, and that when it has proved beneficial in farcy, it has been given in small doses from ten to fifteen grains or even less, joined with sublimate; and then the latter, that is, the sublimate, was, I suspect, the most useful ingredient.

As the white oxide of arsenic is found, after death, to adhere to the coat of the stomach, it is not improbable that a solution of arsenic would be a more advantageous mode of employing this medicine. The preparation generally known by the name of "Fowler's Solution" may be exhibited in doses of half a drachm, twice or three times a day, to begin with, and gradually increased so long as no unfavourable symptoms are perceived. The use of

arsenic is contra-indicated whenever there exist any affections of the lungs, or where febrile action is going on. In short, this being a dangerous medicine to trifle with, should never be used without the sanction of the veterinary surgeon. As a tonic, it has been strongly recommended in small doses, or in solution, but it should be given with caution, and not until the vegetable tonics, such as gentian, columbo, bark, cordials, wholesome food, and occasionally physic, have proved ineffectual. (See Tonics, and Cordials; also vol. i. 15th edition, art. Condition and Stable Management.) Yellow arsenic, finely powdered and mixed with lard, is sometimes used by farriers to remove warts; also in fistula of the withers and poll-evil, but its effect is sometimes violent, and extends beyond the diseased parts.*

ARTEMISIA ABSINTHIUM. Wormwood, which see.

ARTEMISIA SANTONICA. Southern-wood, which see.

ASARUM.—*Asarabacca.* The leaves of asarabacca are cathartic and diuretic. I do not know that they are ever used as such in veterinary medi-

* I have been led to believe that when arsenic is employed, whether as an alterative, a tonic, an anthelmintic, or as an auxiliary to mercurial preparations in farcy, or in any attempts that may be made to cure the glanders, it should be given in small doses, and reduced to the state of a very fine powder by rubbing it a considerable time in a mortar, with about ten times its weight of super-tartrate of potash. *One grain* thus prepared, and mixed with the horse's corn, may be given three times a day, and continued until some effect has been produced upon the stomach or bowels, or until the disease is removed for which it is employed.

cine; but in cases of chronic ophthalmy, or habitual megrims, about half a scruple or more of the powdered leaves may be blown up the nostrils, to produce a discharge of mucus from the nasal passages.

ASPIDIUM.—*Aspidii Radix.* Root of the male fern. See Fern.

ASSAFŒTIDA.—*Assafœtidæ, Gummi-resina.* Assafœtida is sent to this country packed in cases, casks, and mats. That contained in the cases is to be preferred. It is in irregular lumps, of a reddish-brown colour, intersected by small glistening tears, of a pale red, whitish, or violet hue. The best quality is that which contains the most tears, and is of a light red colour. It is a gummy and resinous substance, possessing a powerful and most unpleasant smell. It is much used in human medicine as an antispasmodic, in nervous and hysterical complaints. In veterinary practice it is not so frequently employed, though some practitioners speak highly of its virtues. It is said to be serviceable in obstinate coughs, or thickness of wind, flatulent colic, and locked-jaw. It appears to be more efficacious when joined with ammonia, in the form of *fœtid spirit of ammonia*, a preparation kept in the shops. The dose of assafœtida is from two drams to half an ounce or more; it is generally joined with galbanum, ammoniacum, opium, &c. When employed as an expectorant, squill, ammoniacum, camphor, or opium, may be added.

The dose of the fœtid spirit of ammonia is from one ounce to one ounce and a half.

ASTRAGALUS.—*Tragacantha.* Gum Tragacanth. The properties of this gum are similar to those of Gum Arabic.

ASTRINGENTS. Medicines that diminish increased evacuations, as those of dung or urine in the diseases named diarrhœa and diabetes: they are employed also for the cure of bloody urine, and sometimes externally to heal wounds, or put a stop to that discharge from the heels, termed grease, as well as to heal those painful sores or cracks with which that part is often affected in winter. Medical writers generally class the preparations of iron, copper, zinc, and lead, with astringents: these, however, have not been found very useful as internal remedies in the horse; and whenever they prove serviceable, it is in cases of debility, in which tonics are required..

The mineral tonics have been recommended in diabetes, especially sulphate of copper (blue vitriol), which I have been informed has, in several cases, been found an effectual remedy for diabetes. The dose, about one dram, joined with other tonics, cordials, or astringents, such as cascarilla or cinchona bark, or the common cordial ball. The effect of those medicines is considerably promoted by a nutritious diet, moderate exercise, and good grooming. (See vol. i.) Astringents must be employed with much caution in *diarrhœa*, especially in horses. In these animals it is generally occasioned by bad hay or oats, and may be corrected by altering the diet. In horses of weak constitutions it may be brought

on by drinking too freely of very cold water. In such cases the remedy is obvious. In general, the diarrhœa of horses may be stopped by attention to these circumstances, especially if assisted by gruel made of arrow-root or wheat flour; and it is only after this has failed that astringents should be resorted to. The diarrhœa of cattle is of a more formidable nature, and generally proves incurable, unless the animal is sheltered from the weather, and fed partly or wholly on wholesome nutritious food. (See vol. iv.) The astringents most useful in the diarrhœa of cattle are catechu, kino, oak-bark, pomegranate-bark, with aromatics and opium, joined with a nutritious diet. Diuretics have been prescribed, such as turpentine, which probably may be advantageously joined with tonics or cordials. Astringents are often required as external applications, as in grease, and troublesome sores about the heels or other parts, or thrushes of the frog. For such purposes finely-powdered alum, either alone or mixed with pipe-clay, or bole-armenic, may be used; or sulphate of zinc or copper, finely powdered and mixed with pipe-clay, chalk, or bole; or dissolved in water or vinegar. These astringents may be occasionally mixed with lard, or wax ointment, in which case they should be reduced to a very fine powder. Acetate of lead (sugar of lead) is an excellent astringent for external use, whether dissolved in water, or diluted with vinegar or spirit, and employed as a lotion; or with lard or other unctuous substances, and used as an ointment. (See Acetate of Lead.)

Though the sulphate of copper (blue vitriol) is named here as an astringent, it may be rather considered an *escharotic* or mild caustic when used alone externally; but it may be so weakened by dilution as to become an astringent, and when sufficiently weakened with water, may be applied even to the eyes. (See Copper.) Sulphate of zinc (white vitriol or copperas) is also an useful astringent when rendered mild by mixture with water or unctuous substances, such as lard; but alum is still milder, and may be used as an astringent in powder. Sulphate of iron (green copperas or vitriol) is a powerful astringent, and is sometimes used internally as a tonic. The dose from one to two or three drams. It is seldom employed externally, and then in solution only. From the foregoing observations it will be seen that the distinction between tonics and astringents is not very clearly marked. The mode of operation of astringents on the living body has been erroneously supposed to be similar to that by which dead animal fibres are constringed and condensed. That property of vegetables which is termed astringency, as it relates to dead animal matter, results from a peculiar principle, termed by chemists *tannin*, and the gallic acid. The former is remarkable for its strong attraction for animal gelatine, and the latter for striking a black colour with the salts of iron. But increased evacuations, or a discharge of matter or other fluid from the skin or from sores, do not depend merely upon mechanical laxity of the solids; nor does the process by which they are restrained

resemble that by which dead animal matter is constringed or condensed, as in tanning hides. Astringency, therefore, in a medical sense, is a peculiar power exerted upon living matter, by which inordinate evacuations or discharges are restrained or suppressed, in a manner with which we are unacquainted. There are other vegetables, besides those above prescribed, that are occasionally used as astringents, such as tormentil, bistort, galls, madder, dragon's blood, catechu, logwood, &c., each of which will be noticed under its respective name. The term astringent is often applied to those medicines or preparations that are supposed to possess the power of putting a stop to hæmorrhage or bleeding, either internally or externally from wounds; these will be noticed under the head *Styptics*.

ASTRINGENTS, for diarrhœa, diabetes, or red water.

No. 1. Opium .... ½ dr. to 1 dr.
Ginger .... 1½ dr.
Prepared chalk ...... 3 dr.
Flour .... 2 dr.

Mix into a ball with treacle, syrup, or honey, for one dose.

No. 2. Gum kino .... 2 dr.
Aromatic powder .... 1½ dr.
Or, Veterinary aromatic powder 6 dr.
Carbonate of soda .... 2 dr.
Treacle enough to form the mass.

No. 3. Powdered catechu .... 2 to 4 dr.
Alum .... 2 to 4 dr.

Powdered opium . . . . . ½ dr. to 1 dr.
Powdered ginger . . . . . 1 to 2 dr.
Oil of cloves . . . . 10 drops.
Treacle enough to form the ball.

For Diabetes, or an excessive discharge of urine.

No. 1. Catechu, or kino . . . . . 2 to 4 dr.
Powdered ginger . . . . . 1 to 2 dr.
——— gentian . . . . 2 to 3 dr.
Opium . . . . ½ dr.
Oil of caraways . . . . . . 20 drops.
Syrup enough to form the ball. One dose.

No. 2. Opium . . . . ½ dr. to 1 dr.
Ginger . . . . 1 to 2 dr.
Cinchona, or Peruvian bark; or when that cannot be had, powdered oak bark . . . . 1 oz. or more.

To be mixed with a decoction of oak bark, or a strong infusion of camomile flowers, and given as a drench. Either of these may be given early in the morning, and repeated at night, should it be found necessary.

EXTERNAL ASTRINGENTS.

POWDERS.

No. 1. Powdered alum . . . . . . 4 oz.
Armenian bole . . . . . . 1 oz.—Mix.

No. 2. White vitriol . . . . 2 oz.
Flowers of zinc . . . . . . 1 oz.—Mix.

LOTIONS.

No. 3. A strong goulard mixture.

No. 4. A solution of blue vitriol, white vitriol, or alum.

No. 5. Muriate of iron . . . . 1 oz.
Water. . . . . 8 oz.—Mix.

OINTMENTS.

No. 1. Venice turpentine . . . . . . 4 oz.
Bees' wax . . . . 1 oz.
Hog's lard . . . . 4 oz.

Melt over a slow fire; and when rather cool, but while it is liquid, add sugar of lead 1 oz. or alum, finely powdered, 2 oz. Stir the mixture until it is cold.

No. 2. Ointment of yellow resin 4 oz.
Oil of turpentine . . . . . . 1 oz.
Sulphate of copper finely powdered . . . . ½ oz.—Mix.

No. 3. Red nitrated mercury, commonly named red precipitate, rubbed down to a very fine powder . . . . 1 dr.
Calamine cerate, commonly named Turner's cerate. . . . . 2 oz.—Mix.

Remark.—The astringent powders and ointments are designed chiefly as remedies for the grease, after the inflammation of the part has been in great measure removed by proper poultices; but the ointment is applicable only to those ulcerations or cracks which are sometimes an effect of that disease; and often occurring from other causes.

ATROPA BELLADONNA. See Belladonna.

AVENS. See Geum Urbanum.

AXUNGE. This name is commonly given to hog's lard. See Adeps.

AZOTE. This name is given to nitrogen, on account of its being incapable by itself of supporting life. Nitrogen is an elementary principle which exists pure only in the form of gas. It constitutes 0·78 of atmospheric air, and forms a principal part of all animal substances. In combination with oxygen, in different proportions, it forms the nitric and nitrous acids.

BALAUSTINE FLOWERS.—*Granati Flores.* The flowers of the pomegranate, a weak astringent. See Pomegranate.

BALLS.—*Boli.* Medicine is most commonly given to horses in the form of a ball or bolus, the size of which should not exceed that of a hen's egg. Though named a *ball*, it is generally rolled up in a cylindrical form, about one inch in diameter, and two and a half in length; but the form of an egg, perhaps, is preferable. There is sometimes difficulty in giving *balls*, without using the instrument termed a *balling iron;* and there are some horses that will not take a ball by any other means. In giving a ball, the horse's tongue is drawn out on the off or right side, and held firmly with the left hand, while with the right the ball is quickly passed over the tongue into the pharynx, or top of the gullet. The hand should be kept as near to the roof of the mouth as possible in giving the ball; there

will then be much less danger of being wounded by the teeth. The moment the right hand is withdrawn from the mouth the tongue is let loose, and the ball generally swallowed. The *balling iron* is so contrived as to keep the mouth open, while the ball is forced into the throat; it is then immediately withdrawn.

Balls should be made at the time they are wanted; as by keeping they often become so hard as to be almost insoluble in the stomach, sometimes passing through the intestines unchanged: by keeping they also lose much of their strength, particularly when the ingredients are evaporable in the common temperature of the atmosphere, which is the case with camphor, ammonia, essential oils, &c. But the most serious inconvenience which arises from giving balls that have been kept until they become very hard, is, that they are liable to stick in the throat or gullet, and thereby endanger the horse's life: indeed, I have known horses destroyed in this way.

Balls cannot be conveniently given unless wrapped up in paper: but for this purpose the softest and thinnest should be chosen.

The balling iron is to be carefully covered with cloth or listing to prevent the mouth from being bruised by it. In holding the tongue with the left hand while the ball is introduced, great care is required, as the rough and violent manner in which this is sometimes done often injures the tongue or lacerates the under part of it, named the bridle.

The muscles by which swallowing is effected may also be seriously injured in this way. In violent colds, strangles, &c., there is often so much soreness of the throat as to render swallowing very painful and difficult; in such cases neither *balls* nor *drenches* should be given, as they are sure to do mischief by irritating the throat, and may even suffocate the animal by getting into the windpipe. (See Drenches.) An instrument has been contrived for introducing balls into the mouth, and is sold at the veterinary instrument-maker's, R. Long, Holborn, London.

When a ball is found to exceed the proper size, it should be divided and given separately, as much injury has been done by giving balls too large, especially when they have become dry and hard, or wrapped in thick paper. I have known two horses killed in this way. In making balls, the dry ingredients should be finely powdered and well mixed; the liquid for forming them into balls should be adapted to the nature of the other ingredients. When a ball contains any acrid, or very powerful ingredient, such as sublimate or arsenic, flour and paste may be employed for mixing it up, and a small bran mash should be given a little before or after it. After giving a ball, grooms sometimes press or pinch the throat for the purpose of making the horse swallow it: but this should never be done, as it is apt to excite coughing, by which swallowing is prevented. The only thing necessary after the hand is withdrawn is to keep the mouth shut, and

press the nose downwards, in a moderate degree, towards the chest. Previous to the composition of a medicine it is necessary to reflect, and consider whether its operation is required on the stomach, the alimentary part of the intestinal canal, or the large intestines. If on the stomach, a drench is the best form; if on the alimentary canal or small intestines, a soft ball, containing a small quantity of potash or soda, should be preferred, unless there is any ingredient in the ball which renders an alkali improper. There is a quality in potash which may be considered an inconvenience, but it is really an advantage; a ball containing potash continues soft, and, if kept, becomes too soft by the moisture which the potash attracts; therefore it must be given soon after it is made. In forming a cathartic, soap is the best article that can be employed, provided it be not incompatible with the other ingredients of the ball. Balls, made with soap, even if kept some time, may be given without that danger which attends the exhibition of old or hard cordial or diuretic balls, which do not contain soap or potash; therefore, balls which are intended to be kept some time, such as diuretics, should always be formed with soap. Balls made with resin or turpentine, nitre, &c., or cordial balls made with syrup, and kept to become hard, are not only liable to remain in the cæcum or blind gut, causing the conglutination of the earthy matter contained in the excrement, or serving as a nucleus for it, and producing the large stones sometimes found in that part, but

are liable also to stick in the œsophagus or gullet, and so low down, that is, within the cavity of the chest, as to remain undiscovered, and cause the animal's death. I have met with such cases, and was not aware of the circumstance till after the horse's death, when I discovered the ball wrapped in brown paper, and firmly lodged in the lower part of the œsophagus. In the three cases I have seen, the ball was of the cordial kind, and two of them wrapped in brown paper: in one of them sulphur was an ingredient. One of them was lodged about the pharynx, and produced a fatal inflammation of the windpipe and lungs. This horse was labouring under a severe catarrhal affection at the time the ball was given, attended probably with sore throat, in which case no attempt should ever be made to give either balls or drenches. In the other two cases the balls were lodged in the lower part of the œsophagus. The symptoms were those of choking terminating in suffocation. In one instance the appetite and power of swallowing continued until the upper or all that part of the œsophagus that could be felt in the neck was distended with masticated food, as if it had been rammed into it, so that the animal was at length suffocated. I therefore am of opinion that just before administering a ball, it is advisable to dip it in oil.

COUGH BALLS.

No. 1. Gum ammoniac .... 2 to 3 dr.
Powdered squills .... 1 dr.

	Camphor	1 dr.
	Ginger	1 dr.
	Castile soap	2 dr.
	Oil of anise-seed	20 drops.

Syrup and flour enough to form the ball.

No. 2.	Strained turpentine	8 oz.
	Yellow resin	4 oz.
	Olive oil	2 oz.
	Hard soap	8 oz.

Put these in a pan over a slow fire, and when perfectly melted stir in six ounces of powdered ginger, and a like quantity of powdered allspice, adding enough liquorice powder to form a substance fit for making balls. The dose is from 1½ oz. to 2 oz., for two or three successive mornings, or until it acts as a diuretic.

EXPECTORANT BALL.

Gum ammoniacum	2 oz.
Powdered squills	1 oz.
Powdered ipecacuanha	½ oz.
Powdered opium	½ oz.
Powdered ginger	1 oz.
Powdered allspice	1 oz.
Oil of anise-seed	½ oz.
Balsam of sulphur	4 oz.
Castile soap softened with syrup	2 oz.

To be divided into moderate sized balls, one of which to be given morning and evening.

CORDIAL DIURETIC BALL.

Common turpentine and hard soap,
of each .... 3 dr.
Powdered ginger .... 1 dr.
Powdered allspice .... 1 to 2 dr.
Liquorice or linseed powder enough to form a ball.

BALL FOR SUPPRESSION OF URINE.

Camphor .... 2 dr.
Nitre .... 1 oz.
Flour and syrup enough to form the ball.

BALLS FOR DIABETES.

No. 1. Opium .... ½ dr. to 1 dr.
Ginger .... 2 dr.
Gentian root powder .... 3 or 4 dr.
Oil of caraways .... 20 or 30 drops.
Syrup enough to form the ball.

To be given morning and evening for two or three days, and if a proper effect be not produced, give the following:

No. 2. Sulphate of copper.......... 1 dr.
Ginger .... 1 dr.
Linseed powder and syrup enough to form the ball.

To be given morning and evening so long as the disease remains.

ASTRINGENT BALLS.

Powdered catechu .... ½ oz.
Powered alum .... 3 or 4 dr.
Cascarilla bark .... 2 dr.
Flour and treacle enough to form the ball.

To be given once or twice or day. If the desired effect be not produced after giving three or four balls, add to each from half a dram to a dram of opium.

CORDIAL BALLS.

No. 1.	Powdered ginger	1 dr.
	Powdered allspice	2 dr.
	Fresh powdered caraway seeds,	3 dr.

Treacle enough to make a ball.

If this should not succeed give :—

No. 2.	Sulphate of iron	2 or 3 dr.
	Powdered gentian	3 or 4 dr.
	Powdered ginger	1 dr.

Treacle as much as is requisite to form the ball.

PURGING BALLS.

No. 1.	Barbadoes aloes	from 5 dr. to 1 oz.
	Ginger	1 to 2 dr.
	Oil of caraways	20 drops.
	Castile soap	3 to 4 dr.

Syrup enough to make the ball.

No. 2.	Barbadoes aloes	4 to 6 dr.
	Ginger	1 dr.
	Hard soap	2 dr.

Syrup as much as may be necessary.

BALM.—*Melissa.* This may be used in infusion as a diluent.

BALSAMS.—*Balsama.* Balsams are generally fluid, of various degrees of thickness, odorous and combustible : they resemble resins, being soluble in

spirit of wine; and when thus dissolved, impart to water a sweetish taste, and a milky appearance.

BALSAM, ANODYNE, or Bate's Anodyne Balsam. For strains.

White soap	4 oz.
Camphor	2 oz.
Opium	1 oz.
Oil of rosemary	½ oz.
Rectified spirit	2 pints.

BALSAM OF CANADA is a very pure kind of turpentine; and though preferred on this account to Venice and common turpentine, is unnecessary in veterinary medicine, being very expensive; whereas Venice turpentine is much cheaper, and I believe equally efficacious.

Canada Balsam is a strong diuretic in the dose of one ounce or more; in smaller doses it has been recommended in chronic cough, and diseases of the lungs.

BALSAM OF COPAIBA, or *Capivy*, possesses nearly the same properties as the preceding.

The dose is about one or two ounces, or more.

BALSAM, FRIAR'S, or *Traumatic*, now named compound Tincture of Benjamin, or Benzoin, is made in the following manner:

Benzoin	3 oz.
Storax balsam, strained	2 oz.
Balsam of tolu	1 oz.
Extract of spiked aloes ..	½ oz.
Rectified spirit	2 pints.

Macerate for fourteen days (seven days; Dub.),

and filtre or strain through blotting paper. The properties of this tincture are stimulating and expectorant, and it is therefore by some prescribed, in combination with other remedies, in cases of old chronic cough or broken wind. As it is decomposed by water, it should first be amalgamated with mucilage or yolk of egg, in order to suspend it in aqueous liquids, when given internally. However, its principal use is that of a stimulant external application to indolent sores or wounds.

Balsam of Gilead is nearly similar to the *capivy*, but more pleasant. Many virtues have been attributed to these balsams by medical writers: they were supposed to heal ulceration of the lungs, kidneys, or other internal parts, and to be powerful corroborants. They do not appear, however, to possess these qualities, nor do they seem to differ much from *turpentine* in their medical virtues. (See Turpentine.)

Balsam of Peru. This is of a different kind from the former balsams, being more stimulating.

The dose is from one to two drams. (See Expectorants and Pectorals.) It is sometimes used externally as an application to irritable ulcers.

Balsam of Tolu. This is generally in a solid form, of a light yellowish colour, and fragrant odour: it is used for the same purposes as the balsam of Peru, in doses from one to two drams.

Balsam of Sulphur. This is made by boiling sulphur and olive oil, until they are united: they form a dark-coloured mass, rather like treacle in

appearance, but more tenacious, and of a very disagreeable odour.

Balsam of sulphur is used as an *expectorant;* but farriers frequently employ it in recent inflammatory coughs, which is highly improper.

The dose is from half an ounce to one ounce, mixed with anise or liquorice powder.

BARBADOES ALOES. See Aloes.

BARBADOES TAR.—*Petroleum.* This is a bituminous substance, brought from the island of Barbadoes. It is nearly of the colour and consistence of common tar, but smells differently, and its colour approaches more to brown. It is insoluble in water, but dissolves in alcohol, ether, and in the fixed and volatile oils, and combines with fat, essential oil, resins, and camphor. By subjection to the influence of sulphuric or nitric acid it becomes a solid resin. It has a considerable diuretic power, and is said to be useful in chronic coughs. Farriers frequently use it in this disease; but by giving it indiscriminately they often do mischief. They also employ it (generally dissolved in oil of turpentine and oil of elder) as an external remedy in strains and bruises.

BARILLA.—*Sodæ Carbonas impurus.* Impure Carbonate of Soda. This is found native in several parts of the world, as Hungary, Egypt, Arabia, South America, &c. The greater portion of barilla used in this country is made by burning certain plants (the principal of which is *Salsola Soda*) until their ashes are reduced to a state of

fusion, and concrete into masses, which constitute the barilla of commerce. It is only used for preparing the pure sub-carbonate of soda.

BARK, PERUVIAN, or *Jesuits' Bark.—Cinchona.* Though in the human subject bark is an useful tonic and febrifuge medicine, it has no very remarkable effect on the horse. I have seen it do good, however, in *diabetes*, a disease consisting in an excessive discharge of urine.

The dose is from six drams to one ounce and a half or two ounces.

There are three sorts of bark: the pale or *Jesuits'*, the *red*, and the *yellow*. The first is considered the best, and is most commonly used; but the others do not greatly differ from it in their effects. *Oak bark* would probably be found an useful substitute for Peruvian bark. By boiling bark in water a considerable time, its virtues are said to be considerably diminished.*

* Gray, in his Supplement to the Pharmacopœias, after describing several species of bark, observes, " most of these barks, as soon as they come out of the merchant's hands, are sold by the druggists under three or four names only; viz.—1st. Peruvian, grey or pale bark; 2d. yellow bark; 3d. red bark; 4th. St. Lucia bark; each of which is distinguished into quilled bark, or that taken off the smaller branches, or from the younger trees, rolled up like cinnamon with the outer coat not taken off; and the large flat pieces with or without the outer coat." (See also Thomson's London Dispensatory.)

The bark of certain English trees has been proposed as a substitute for the Peruvian or Cinchona bark, but none of them seem to have answered the purpose in human medicine. For veterinary purposes the oak bark is more likely to prove useful as a tonic than any other (see Tonics), and may probably be substituted for Cinchona, with good effect, when the price of the latter prevents its being employed.

There is a concentrated preparation of bark, called the Sulphate of Quinine. I am not aware that it has ever been employed as a horse medicine, but should feel disposed to give it a trial. The dose may be from ten grains to thirty, twice or three times a day.

It is a very mistaken notion which practitioners of the medical art have very generally adopted, that bark is *strengthening*. Of itself, it can have no tonic power, and can only strengthen a patient by improving digestion. It may be said, that it is very immaterial in what way it acts provided its effects are beneficial: and that I am quite ready to admit; but when surgeons imagine that the more bark they can get down their patients' throats the more strength they are infusing into them, the idea supposes an inherent power in bark to diffuse strength; and this is absurd, as well in the practice of veterinary as human medicine.

BARLEY.—*Hordei Semina.* This is sometimes used as food for horses; but is less fit for that purpose than oats or beans. I have known it tried as a substitute for the former, when it was found difficult of digestion, and productive of many complaints. If horses, however, be accustomed to it gradually, it proves very nutritious and useful.

Boiled barley is recommended by Gibson as nutritious food, easy of digestion, and fit for sick or convalescent horses. Barley-water, sweetened, may be found an useful drink in fevers, or may be employed as a vehicle for cooling medicine, such as

nitre. It is made by boiling pearl-barley for two or three hours in water. A nutritious gruel may be made with barley-meal, though perhaps inferior to that made with oatmeal or wheat flour. (See Restoratives and Gruel.) I have been informed, that Mr. Rogers, an innkeeper at Southampton, has, for several years, fed his post-horses with barley that has been soaked in water from 20 to 30 hours, and chopped straw ; sometimes, I believe, he puts a little hay in the rack for them.

Mr. Coke, of Norfolk, a celebrated agriculturist, tried the experiment of feeding his horses upon steeped barley, which was kept until it began to sprout, and found that his horses throve uncommonly well upon it, and also that this species of provender was much less expensive than oats. However, the money saved by this mode of feeding was afterwards lost in another way; for the Excise, hearing of Mr. Coke's experiments, forced him to pay the *malt duty*.

BARRAS. An impure species of turpentine.

BARYTA.—*Terra Ponderosa*. Barytes. This mineral has not yet been discovered in an uncombined state. It is usually found united either with sulphuric acid or with carbonic acid; from which combinations result the sulphate of barytes or *heavy spar*, and the carbonate of barytes, or *witherite*, so denominated after its discoverer, Dr. Withering. Both these substances are used for making the muriate of barytes, the only preparation of this mineral in general use. It is a medicine of very

uncertain power, and should be used with the greatest caution. M. Dupuy gave 9 drams 36 grains to a glandered mare, of which dose she shortly after expired. Mr. William Percival made some experiments with barytes upon glandered horses, the results of which were various, and showed that, although in some cases possessed of considerable efficacy, it is not altogether a medicine to be relied on. Some of the horses treated by Mr. Percival were destroyed, without their having received any perceptible benefit from the barytes. Others were completely cured by its administration; and not a few died from the effects of an over-dose. In general, those horses that were in pretty good condition at the time of their admission into the infirmary were found to receive most benefit from barytes. Mr. Percival employed the muriate of barytes in the dose of one dram, which was cautiously increased to three drams; the horse died. Another case, where half this quantity was used, did well. One ounce and a half of the solution of muriate of barytes, gradually increased to two ounces, destroyed life in twenty-four days. A similar effect was produced by half a scruple of pure barytes, augmented to one scruple and a half, and administered for seventeen days. The same dose, however, succeeded in two other instances, in one of which the use of the medicine was persevered in for seventy-one, and in the other for thirty-two days. Where the pure barytes was given to the extent of four scruples (beginning with one), it caused death;

and when carried to the extent of two drams, the patient, a bay gelding, eight years old and in good condition, died suddenly. The carbonate of barytes, given from three drams to half an ounce for sixty-four days, did not afford relief. However, as this was the only case treated by this preparation of barytes, it can hardly be said to have received a sufficient trial. On the whole, then, as we know of no specific for the glanders, and as this medicine has afforded more relief than any other, and has, in some instances, completely removed the disease, it will be right to make trial of it in small doses, giving not more than half a dram of the muriate of barytes to begin with, and not increasing the dose to more than three times that quantity. Of pure barytes, from fifteen grains to one scruple may be administered, and cautiously increased to one scruple and a half.

BASILICUM, or BASILICON, a digestive ointment, composed of resin, bees' wax, and olive oil, of each equal parts. It is now named ointment of yellow resin. By adding to it a little oil of turpentine and verdigris it may be employed as a digestive for horses. (See Digestives.)

BATHING. A remedy seldom employed in the diseases of horses. I once saw an obstinate case of costiveness removed by driving the animal into a river. It is said, that lameness, arising from strains, may be cured by making the horse swim. The warm bath would probably be found useful in some cases, and appears to be used in the French vete-

rinary colleges. (See vol. i. Preface to the 12th edition, inserted in the 15th edition of my work on Farriery.) I have been informed, that Mr. Maberly, of Spring Park, Surrey, was formerly in the habit of putting his horses in a warm bath whenever they returned from hunting. This, although only within the reach of people of fortune, is a very excellent practice, as there is frequently congestion of some particular organ, as the heart, lungs, or liver, after excessive fatigue, and the warm bath, by drawing the blood into the capillaries of the skin, tends to relieve the over-loaded organ, and thereby to equalize the circulation.

BAY TREE.—*Laurus Nobilis.* The leaves and berries of the bay tree are employed in veterinary medicine, the former as an ingredient in the decoction for fomentations; the latter as a stomachic, and as an ingredient in that ancient, but still celebrated stomachic powder, named diapente or diapenty. (See Stomachics, and my Veterinary Dictionary.)

BDELLIUM. A gum resin not very unlike myrrh, but weaker.

BEANS are often used as an article of diet. If given moderately to horses that work hard, they prove extremely useful and invigorating; but to such as are not much worked they often do harm, by disposing the system to inflammatory complaints. Beans should be bruised or ground, being more easy of digestion in that state. (See my Veterinary Dictionary.)

BEARBERRY. See Uva Ursi.

BEAR'S FOOT.—*Helleborus Fœtidus.* This medicine, in man, proves highly cathartic and emetic. It has likewise been successfully employed as an anthelmintic. If given in a large dose its effects are very dangerous. I am not aware that it is used in veterinary medicine, although it may be worth a trial.

BEER or ALE.—*Cerevisia.* An useful vehicle for cordials and tonics; and when mild and perfectly free from harshness or acidity, is of itself a good cordial, especially when given warm with a little grated ginger. It may be given also with oatmeal or wheat flour gruel as a restorative, when a horse is exhausted by fatigue and long fasting. (See Gruel and Restoratives.) In colic, gripes, or fret, when medicines cannot be procured, warm ale with a little gin or other spirit, and ginger, may be given.

BEES' WAX.—*Cera Flava.* See Wax.

BELLADONNA. Deadly Nightshade. A powerful narcotic. The extract of belladonna is sometimes applied to the eye to cure a morbid contraction of the iris, or rather of its circular fibres. (See vol. i.; also the Author's Veterinary Dictionary, article Eye.)

BENZOIN.—*Benzomum.* A concrete resinous substance of a yellowish colour, inclining to pink, and variegated with small white masses. By exposure to a strong heat, it gives out an extremely light flowery substance, which is termed *flowers of Benjamin.* This is beautifully white and

fragrant, and is used in human medicine in coughs, and other complaints of the lungs. In veterinary medicine neither the resin nor flower are employed, nor do I know any disease in which they are likely to be of use.

The former is an ingredient in the traumatic or Friar's balsam, now called compound tincture of Benzoin ; and the latter is employed in making paregoric elixir, or camphorated tincture of opium.

BEZOAR STONE is found in the stomach or gall bladder of certain animals. It was formerly esteemed as a cordial, but is not now used.

BIRTHWORT.—*Aristolochia Serpentaria.* This root, though formerly celebrated, is now rarely employed. Farriers sometimes use it as a stimulant and tonic, but it is now superseded by more valuable medicines. (See Aristolochia.)

BISTORT.—*Bistorta.* The roots of this plant are considered the most powerful of the vegetable astringents; they have been recommended as a *styptic,* to restrain hæmorrhages, but ought never to be depended upon for this purpose. Many imaginary virtues have been attributed to this plant. The dose is from half an ounce to an ounce, and may be given either in powder, or boiled in water and made into a drench, in those cases where simple astringents are necessary.

BITTER APPLE.—*Colocynthis.* See Colocynth.

BITTER SWEET, or WOODY NIGHTSHADE.—*Dulcamara.* The stalks of bitter

sweet. This is an indigenous shrub, found growing in shaded places. It flowers in June and July, and its properties are diuretic and narcotic. It is generally given in the form of decoction, made by boiling one ounce of the sliced stalks in a pint and a half of water, until a pint only of the liquor remains. The dose from four to eight ounces.

BITUMEN. Bituminous Oils. Barbadoes Tar. *Petroleum.* Certain inflammable substances are thus named, obtained from the mineral kingdom, among which are Barbadoes Tar, Naphtha, Asphaltum, &c.

BLEEDING. This operation is frequently required in the diseases of horses; and if employed seasonably, and to a sufficient extent, is the most efficacious remedy we are acquainted with. When a horse appears dull and heavy, and indifferent about his food, by bleeding we often prevent a fever. If a horse is bled at the commencement of a cold, the complaint generally proves moderate, and of short continuance. In all cases of internal inflammation, or symptomatic fever, bleeding is the most essential remedy, provided the operation be performed at an early period, and the blood drawn in sufficient quantity. In such cases I have often taken away six quarts or more, and repeated the operation the same or the following day when it appeared necessary. By bleeding copiously at first those formidable diseases are crushed at once; while by suffering them to proceed or become at all violent, which they will do unless this practice is adopted (or if only a small quantity of blood is

drawn), they generally prove fatal: nor will bleeding be of any service.

BLEEDING is either general or local: that is, it is done either so as to affect the system in general, or a particular part only. For general bleeding, the jugular or neck vein is most convenient.

When the jugular vein is firmly pressed with the fingers of the left hand, the blood is prevented from descending, and that part of the vein which is above the fingers is considerably distended, and becomes very conspicuous. In this state it may be easily opened with a lancet held in the right hand. The vein will continue to bleed so long as the pressure below is continued.

Farriers bleed with a *fleam*, which, though apparently a clumsy method of operating, is certainly safer than the lancet in unskilful hands. In topical bleeding, a vein is chosen as near as possible to the affected part, or the vessels covering the part are opened: in the inflammation of the eye, for example, it is done by scarifying the inner surface of the eye-lid, or by opening a small vein which is easily seen going from the inner corner of the eye towards the nose. I do not think, however, that either of these operations do any good; indeed that of scarifying the eye-lids is often, I believe, injurious.

A graduated tin vessel, capable of containing six or seven quarts, is very convenient for the purpose of receiving the blood; every pint being marked on the inside of the vessel, so that the quantity of blood drawn may be exactly known. The blood

should always be preserved, that we may judge from its appearance of the nature of the disease, and whether it is proper or not to repeat the operation. When it continues fluid a considerable time it denotes an inflammatory state of the system. Should a whitish or light buff-coloured jelly appear on its surface, after it has coagulated or settled, and should this jelly be of considerable thickness, rather firm, not easily penetrated by the finger, we may be satisfied that the horse's complaint is inflammatory; that bleeding was a proper remedy; and that, if the symptoms continue, the operation may be repeated with advantage: but if the blood coagulates quickly, is uniformly of a dark liver colour, loose and easily broken, with a considerable quantity of water upon its surface, it denotes debility, and shows that the disease arises from a weakness of the system; that, instead of *bleeding*, *tonic* and *cordial* medicines are to be employed, with every thing that may tend to restore the animal's strength.

In order to judge correctly by the appearance of the blood, it should be drawn from a large orifice, and not suffered to run down the sides of the vessel which receives it. The first quantity that is drawn should be put aside for examination, and not shaken, or disturbed in any way, until it has perfectly coagulated.

When bleeding is employed as a preventive, or in any slight complaints, from two to three quarts of blood may be taken away, according to the horse's

strength and condition; but in cases of internal inflammation or fever, a more copious evacuation is necessary.

When horses are taken from camp or grass, and put into warm stables, they are very subject to inflammatory complaints and dangerous fevers: under these circumstances, moderate bleeding now and then will prevent such diseases. Horses that are getting into condition, as it is termed, are liable to similar disorders, unless moderate bleeding be occasionally employed. I am inclined to believe, however, that it is a bad practice to bleed often upon trifling occasions; it is liable to induce plethora or fulness of habit, whereby a horse is rendered more susceptible of disease than he would otherwise be. Moderate purging and regular exercise, with a proper regulation of diet and temperature, are fully adequate to the prevention of disease on those occasions; but these are too often neglected.

It has been asserted, that it is seldom necessary to pin up the orifice, which is made in the skin by bleeding. I grant there is not often any danger to be apprehended from its bleeding again; but unless it be pinned up, that is, unless the lips of the wound be brought into contact, and kept in that situation, by passing a pin through the edges of the skin, and twisting a little tow round it, as is generally done by farriers, inflammation and swelling will sometimes take place in the wound, and matter will form in consequence. The *fleam* has been found upon many occasions, particularly for opening the neck

vein, a better instrument than the *lancet;* the latter makes an orifice in the skin, scarcely larger than in the vein; and as the horse is generally a little restless, the blood soon gets between the skin and the vein, plugging up the orifice in the latter, and sometimes diffusing itself in the cellular membrane, so as to cause a swelling, denominated a *thrombus.* The lancet, however, in skilful hands is the neater method, and more convenient for horses that are very shy and difficult to be bled in the common way. I have before endeavoured to show the advantage of early and copious bleeding in the fevers of horses, whether simple or symptomatic. (See vol. i. Bleeding and Fevers.) I think it necessary, however, to repeat, that it is the most important remedy we can employ on these occasions, and may be carried to the extent of six or even eight quarts with the best effect. The practice of bleeding moderately in *fevers* is highly to be reprobated: it raises for a short time delusive hopes of a recovery, but scarcely ever proves effectual. (See the Author's Veterinary Dictionary.)

BLISTERS. This term is applied to medicines that inflame the skin, and cause watery bladders to rise upon its surface: the most useful of this kind is the Cantharis, or Spanish fly, which forms the principal ingredient in all our blisters. There are many others, however, which are generally mixed with it as auxiliaries: among these are hellebore, euphorbium, turpentine, and sublimate.

Blisters are of great use in veterinary medicine:

they are extremely efficacious in dispersing callous swellings, the consequence of *strains*, *bruises*, &c.

In inflammation of parts remote from the surface, they are of great service. When the internal parts of the foot are inflamed, relief is generally obtained by blistering the pastern, provided the subordinate or auxiliary remedies are not omitted, such as paring the sole, soaking the horny part of the foot in warm water, or applying a poultice to it, and giving a dose of physic. When the lungs are inflamed, blistering the sides freely is an excellent remedy, especially when we feel doubtful as to the propriety of further bleeding.

Blistering is employed also for *curbs*, *windgalls*, *spavins*, &c. (See vol. i., and my Veterinary Dictionary.)

Broken knees, unless skilfully treated, frequently leave a callous swelling on the part; for the removal of which blistering is employed. When blisters are properly made, and free from any caustic ingredients, such as sublimate, vitriolic acid, &c., there is no danger of destroying the hair; and if the first blistering does not prove effectual, it may be repeated until the desired effect is produced.

Before a blister is applied, the hair should be closely cut off, or even shaved off, if the situation of the diseased part will admit of its being done without wounding the skin; but good scissors or shears, if skilfully used, will answer the purpose sufficiently. If the skin is scurvy it may be washed with flannel, soap, and warm water, and be made

perfectly dry before the blister is applied. Blisters are generally employed in the form of ointment, but on some occasions they are preferred of a thinner consistence, or in the form of liniment, or even still thinner or more fluid, and are then named liquid blisters. Formulæ, or receipts for each of these, are subjoined. Though a variety of ingredients are generally used in blisters, I believe that the Cantharis, or Spanish fly, is the best; and if not injured by long keeping, or adulterated, is the only blistering ingredient required for common purposes. Spanish flies should be finely powdered, and used while fresh. (See Spanish Flies.)

BLISTER OINTMENT.

No. 1.	Hog's lard............	4 oz.
	Oil of turpentine.......	1 oz.
	Powdered cantharides...	1 oz.—Mix.

Melt the lard by a gradual heat; remove it from the fire, and stir in the turpentine; then add the cantharides, and continue stirring until it is cold.

No. 2.	Hog's lard...............	6 oz.
	Oil of rosemary..........	½ oz.
	Oil of origanum..........	2 dr.
	Powdered cantharides.....	6 dr.

Solution of sublimate in muriatic acid, one fluid dram, or sixty minims. (See Measures, and Sublimate, solution of.)

Mix as above.

No. 3.	Oil of turpentine.........	2 oz.
	Sulphuric acid, by weight..	1 oz.

Mix cautiously, under a chimney, or in the open air, and avoid the suffocating vapour which will arise. When perfectly united, add hog's lard, from six to eight ounces, or more according to the strength required. When a blister is wanted, take two ounces of this ointment and rub up with it from two to three or four drams of recently powdered cantharides. This ointment may be made still stronger by the addition of a little calomel or sublimate at the time it is wanted; but the latter must be used only in a small proportion, and with caution, as it is apt to ulcerate the skin and cause sloughing, and a permanent blemish. It should therefore be applied to a small surface only, as in bone spavin or splent. Neither the cantharides, the calomel, nor sublimate, should be kept ready mixed with the above ointment, as it is probable they would undergo some chemical change, and their quality be altered after a little time. The above recipes may be varied by substituting mercurial ointment, oil of bay, or any other unctuous snbstance for hog's lard, or oil of origanum, for oil of turpentine. And if a more solid form of blister is desired, it may be obtained by the addition of a little bees'-wax, suet, or resin.

BLISTERING LINIMENT.

No. 1. Olive oil . . . . 4 oz.
Oil of turpentine. . . . . $1\frac{1}{2}$ oz.
Oil of origanum . . . . $\frac{1}{2}$ oz.
Recently powdered cantharides 1 oz.—Mix.

No. 2.	Olive oil	4 oz.
	Oil of turpentine............	1 oz.
	Oil of rosemary, and oil of origanum, of each............	½ oz.
	Solution of sublimate	1 dr.
	Recently powdered cantharides	1 oz.—Mix.

LIQUID BLISTER.

No. 1.	Powdered cantharides	1 oz.
	Boiling water	6 to 8 oz.

Macerate for twenty-four hours, and then add rectified spirit of wine, four ounces: solution of corrosive sublimate in muriatic acid, one dram. (See Measures, and Sublimate, solution of.) To be kept well corked for two or three weeks before it is used; it may then be either strained through blotting-paper and used as a transparent tincture, or merely shaken up and employed as it is. The solution of sublimate should be added at the time the blister is used.

No. 2.	Rectified spirit	2 oz.
	Liquid ammonia	2 oz.
	Oil of turpentine, origanum, or rosemary (either)	1 oz.
	Powdered cantharides	6 dr. to 1 oz.

Mix.

After a blister has been applied to the legs or hocks, the litter should be removed, and the horse's head be confined or tied to the rack to prevent his rubbing the part with his nose; but this may be done better by putting what is termed a

cradle or necklace round his neck; he may then be turned loose into a box and exercise himself, which is very desirable after blistering. It is necessary to keep the cradle on for about a fortnight, as horses are apt to gnaw the part or injure the skin when the effect of the blister is going off, and an itching only remains.

The following is a convenient method of making a blister when the other ingredients cannot be obtained. Take of the blistering plaster, sold by druggists, two ounces, melt or rather soften it by a gentle heat, and mix with it oil of turpentine from half an ounce to one ounce.

BLUE OINTMENT. See Mercurial Ointment.

BLUE-STONE. Blue Vitriol. See Sulphate of Copper.

BOLE ARMENIC. A red clay, containing a small proportion of oxide of iron, sometimes used by farriers as an astringent in diarrhœa, or in bloody urine; but it certainly does no good in those complaints. It is sometimes, however, serviceable as an application to ulcers, where the discharge is thin, and acrimonious.

BOLETUS IGNARIUS. See Agaric.

BORAX.—*Sodæ Sub-boras.* Sub-borate of Soda. This, when dissolved in water, is sometimes applied to the mouths of young horses that are inflamed by cutting teeth; I have found, however, that alum, which is much cheaper, is equally effectual. The *Mel Boracis*, or *Honey of Borax*, is made by

mixing one dram of sub-borate of soda, in powder, with one ounce of clarified honey.

BOX. The leaves of box have been said to destroy worms; but, if really *anthelmintic*, it is certainly too weak to deserve our attention. It may be given with the horse's corn. It is said to have a purgative quality.

BRAN. An useful article of diet for sick horses, and a preparative for purgative medicine or physic, as it is commonly termed. (See Cathartics.) Bran should be chosen that is sweet, and free from any musty smell, which it generally acquires by keeping, especially in damp places. There is a superior kind of bran termed pollard, which is sometimes to be preferred; that is, when a little more nutriment is wanted in the mash than common bran will afford; but, as a medicinal mash, common bran is perhaps preferable. *Bran mashes* are made by pouring boiling water on bran, and letting it stand in a pail until sufficiently cool.

Bran Water, or *White Water*, is made in the same manner, using only a larger proportion of water. Bran is of an opening quality, and therefore a proper diet for horses that have but little exercise; it may be occasionally mixed with oats or split beans. Bran, with linseed powder or oatmeal, makes a good poultice. (See Poultice and Mashes.)

BRICKS, OIL OF. An old preparation distilled from a mixture of brick-dust and olive oil, used formerly in strains. Barbadoes tar dissolved

in oil of turpentine is generally sold as such when it is inquired for.

BRIMSTONE. See Sulphur.

BUBON.—*Galbini Gummi Resina.* Galbanum Gum-resin. See Resin.

BUCKBEAN. A perennial flowering plant growing in watery situations, and in black boggy soils; it flowers in June and July. Buckbean has an intensely bitter taste, and is said to be tonic, diuretic, and purgative. With these properties it may be found useful as an anthelmintic or vermifuge.

BUCKTHORN.—*Rhamnus.* The juice of the berries of this plant is supposed to possess a purgative quality, and is generally made into a syrup with sugar. Though farriers sometimes employ it with other purgatives, it is certainly useless as a medicine for horses.

BURDOCK.—*Bardana.* A common plant known by its burs. The leaves are said to be diuretic, and are employed in making the green elder ointment, or Pompillion (*Ung. Populeum*), so much used by farriers.

BURGUNDY PITCH.—*Abietis Resina.* The inspissated juice of the Norway spruce-fir: it somewhat resembles yellow resin, but is less brittle and transparent. What we commonly meet with in the shops appears to be an artificial composition. *Burgundy pitch* is often used by farriers in making *charges* and strengthening plasters; also in some of their ointments.

BURNT ALUM.—*Alumen Exsiccatum vel Ustum.* See Alum.

BUTTER OF ANTIMONY, or, according to the London Dispensatory, Muriate of Antimony—*Antimonii Murias* A dark-coloured liquid, possessing strong caustic powers, and composed of antimony and muriatic acid.

It has been highly spoken of as a remedy for quittors and canker, and other ulcers of a similar kind: it is certainly a strong caustic, and may be employed in cases where such applications are required.

There is something peculiar however in this caustic; which is, that by coming into contact with a moist part, it is immediately decomposed; so that when applied to ulcers its action is of very short duration. The preparation of muriate of antimony has been discarded from the late editions of the London Pharmacopœia. According to Dr. Andrew Duncan's Dispensatory it is made in the following manner:

Take of

Oxide of antimony with sulphur, by nitrate of potass,	each 1 lb.
Sulphuric acid	each 1 lb.
Dried muriate of soda	2 lb.

Pour the sulphuric acid into a retort, gradually adding the muriate of soda and oxide of antimony, previously mixed. Then perform the distillation in a sand bath. Expose the distilled matter for

several days to the air, that it may deliquesce, and then pour the liquid part from the fœces.

CABBAGE-TREE BARK.—*Geoffrœœ Inermis Cortex.* This tree is a native of Jamaica. The pieces brought to this country are grey externally and black internally. They have a sweetish mucilaginous taste and a disagreeable smell, but their medical effects are much stronger than their sensible qualities would seem to infer. On the human frame the bark of the cabbage tree acts as a narcotic, and a powerful anthelmintic, especially where *lumbrici* are present in the intestines. It may, therefore, probably prove serviceable in cases of botts and worms in the horse. The dose for an adult is from one scruple or less to half a dram, in substance; probably a horse would require from three to four drams. It is a medicine that should be given with caution; cold water should be avoided during its operation, and should it appear to occasion griping or uneasiness, warm water or gruel should be administered together with a dose of castor oil and a glyster.

CABALLINE or FETID ALOES. This species is distinguished from the Socotrine and Barbadoes or Hepatic Aloes by its rank offensive smell, of which, when prepared in the most careful manner, it cannot be divested. (See Aloes.)

CAJEPUT OIL, or CAJUPUTI OIL.—*Cajuputi Oleum.* The tree whence this oil is obtained is a native of the Molucca islands. It is a medicine of

highly stimulating properties, and possesses a fragrant, agreeable smell, not unlike a mixture of camphor and oil of turpentine. If dropped on water it immediately diffuses itself over its surface and quickly evaporates, and this is one test of its purity. It is frequently adulterated with oil of turpentine, and in this case will not, like other volatile oils, be found soluble in alcohol. The properties of this oil are considered to be stimulant, antispasmodic, and diaphoretic internally; but in veterinary medicine it is more commonly employed as an embrocation in chronic cases of rheumatic pains, old strains, &c. It may be used alone or diluted with olive oil. A mixture of oil of turpentine, camphor, and oil of rosemary is a good substitute for it.

CALAMI RADIX. See Acorus.

CALAMINE.—*Carbonas Zinci Impurus.* Impure Carbonate of Zinc. An ore of zinc, which, when powdered, resembles a white earth inclining to a red colour. It is employed for the purpose of drying or healing ulcers which discharge a thin acrimonious matter: it is also mixed with hog's lard, oil, and wax, so as to form an ointment, which is used for the same purposes. This ointment, or cerate, is the celebrated *Turner's Cerate.*

CALAMUS AROMATICUS. Sweet Flag. See Acorus.

CALCINATION. The operation of submitting any substance to the action of fire for a considerable time, in order to deprive it of its aqueous and volatile particles.

CALCIS MURIAS. Muriate of Lime. This is chiefly used for preparing the *Liquor Muriatis Calcis* (solution of muriate of lime), a medicine which has been found of considerable efficacy in scrofulous and glandular affections of the human body. I am not aware that this medicine has been much used in veterinary practice, but think that, as its effects are similar to those of muriate of barytes, and there is less fear of its proving deleterious in an over-dose, it is well worth a trial in cases of glanders.

CALCINED MAGNESIA.—*Magnesia Usta.* In this preparation the carbonate of magnesia is deprived of its acid and water. It is used for the same purposes as the carbonate of magnesia, but is preferable to it in cases accompanied by great flatulence or acidity of the stomach (as in the affection known by the name of blasting, see the Author's Veterinary Dictionary, 2nd edition), because it contains more magnesia in a given bulk, and, being deprived of its acid, neutralizes the acid it meets in the stomach and bowels, without the extrication of gas, a circumstance which obviously cannot fail to prove hurtful where there is a tendency to flatulence. The dose may vary from half an ounce to four ounces, according to the effect required to be produced.

CALOMEL.—*Hydrargyri Sub-murias.* Submuriate of Mercury. This is the most useful of the mercurial preparations, and is composed of oxide of quicksilver and muriatic acid. When

prepared it is a fine white powder, rather inclining to yellow and very ponderous. It is the most efficacious *anthelmintic* we are acquainted with (see Anthelmintics), and an excellent *alterative*. When a brisk purgative is wanted, calomel may be added to the common physic, which is composed chiefly of aloes.

Though calomel possesses these useful qualities, it must be given with caution, and its effects carefully watched; as it sometimes acts very violently and unexpectedly on the stomach and bowels, and induces a dangerous degree of weakness. Salivation is sometimes the effect of calomel when given daily as an alterative, or as a remedy for farcy or mange; the mouth becoming so sore, and the tongue so swollen, as to prevent the horse's feeding. When these accidents occur, the medicine should be discontinued a short time, and the horse allowed to drink plentifully of water-gruel, linseed infusion, or any other mucilaginous drink. When the bowels are affected by it, opium is the best remedy, should arrow-root gruel or wheat flour gruel prove ineffectual. In some cases, where it has produced great irritation about the *anus* or bladder, opium should be given in the form of glyster. (See Glysters.) If the mouth becomes very sore, let it be washed with a solution of alum by means of a syringe.

Whenever calomel is given, the horse must be kept warm, drink warm water, and have regular exercise. When calomel is given as an anthelmintic, or as a purgative, the dose is from one to two drams;

as an alterative, from fifteen grains to half a dram. Calomel, combined with diuretics, increases their action upon the kidneys, and, when joined with sudorifics, augments their diaphoretic effects. (See Alteratives and Anthelmintics.)

COLUMBA ROOT.—*Columbæ Radix.* A good tonic and stomachic, generally joined with an aromatic and sometimes with rhubarb. The dose about two or three drams. (See Tonics and Stomachics.)

CAMOMILE.—*Anthemis.* A bitter herb, the flowers of which are employed in fomentations. No other use is made of camomile in veterinary practice.

CAMBOGIA *vel* GAMBOGIA. Gamboge; which see.

CAMPHOR.—*Camphora.* There are two species of camphor, the one produced by a species of laurel, which is a native of North America, China, and Japan; the other found in masses in the trunk of a tree which grows principally on the north-western coast of Sumatra. It was formerly purified by the Venetians and Dutch, but this process it now undergoes to a very considerable extent in this country.

Camphor is a medicine of considerable efficacy in the diseases of horses, though scarcely known to farriers as an internal remedy. It is a powerful sedative and antispasmodic, and is often employed in fevers. When joined with nitre, it gives speedy relief in suppression of urine, or difficulty in staling;

except when it arises from inflammation of the kidneys, but in the horse this complaint is generally caused by distended bowels.

Camphor is a good remedy in flatulent colic, or gripes, particularly if joined with oil of juniper or other carminatives. (See Carminatives.) It has been recommended also in locked jaw mixed with opium. The dose is from one to two drams; though it may be given, I believe, to a greater extent without danger. The dose I employ is one dram and a half, or two drams.

As an external remedy, *camphor* is much used: it is generally dissolved in spirit of wine, oil of turpentine, or common oil, so as to form embrocations for strains, bruises, hard swellings, &c. Soap is often added to those solutions, and sometimes oil of rosemary. (See Embrocations and Antispasmodics.)

CANADA BALSAM. See Balsam of Canada.

CANELLA. Canella Bark. This tree is a native of the West Indies. The odour of the bark when fresh broken is aromatic, and its medicinal properties are stimulant and tonic. It forms a good stomachic in combination with columba, gentian, rhubarb, &c. The *Pulvis aloes cum canellâ*, vulgarly called *Hiera Piera*, is made by powdering separately one pound of hepatic aloes, and three ounces of white canella, and then mixing them. The dose is from two drams to half an ounce or more.

CANTHARIS. Cantharides. Blistering or Spanish Fly. These insects are found adhering to trees

of different kinds in France, Germany, and Spain: those from the latter country are considered the best.

Cantharides are so very acrimonious, that they inflame and excoriate the skin; and hence raise a more perfect blister than any other substance: this property renders them extremely useful in veterinary practice, in which a good *blister* is the most important of all external remedies. *Cantharides* should be finely powdered; but previously to this operation they should be sifted, that they may be freed from a great deal of dust and useless matter, which we generally find with them. When powdered they may be either formed into an ointment, a liniment, or a spirituous tincture; but the former is the best form, and most commonly used. (See Blisters.) "*Cantharides* are imported from Sicily and Astracan, in casks and small chests. The best are of a lively fresh colour, a small size, and not mouldy, nor mixed with the Melolontha *vitis*, an insect resembling them in some degree, but possessing no vesicating property. It may be distinguished by its form, which is more square than that of the Spanish fly, and by its black feet. If Spanish flies have been properly dried, and kept in a well-stopped glass bottle, they retain their acrimony, and remain unchanged a great length of time; but sometimes they are attacked by a small worm, which, however, feeds on the inactive part only of the fly, reducing it to a powder that still possesses the active quality of the entire insect. They soon putrify when kept in a damp place, and

therefore should be occasionally spread out to the air." Thompson's *London Dispensatory.*

Tincture of Cantharides is sometimes given internally in human medicine, and has been prescribed for horses in incontinence of urine. (See vol. i.) Its principal effect is supposed to be upon the neck of the bladder. When incontinence of urine is produced by over distension of the bladder, however, drawing off the urine for a few times, and not allowing that viscus to retain any great accumulation of urine, may, and indeed generally will, restore the tone of the bladder without having recourse to cantharides. Seven grains of powdered cantharides have been prescribed by Mr. Bracey Clark in a tonic drench. An over-dose of this medicine will produce strangury and bloody urine, to counteract which demulcents, as decoction of marsh-mallows, infusion of linseed with gum Arabic, &c. are the most efficacious remedies.

CAPIVY. See Balsam of Copaiba.

CAPSICUM. Cayenne Pepper. This plant is found both in the East and West Indies. Its medicinal properties are those of a strong stimulant, without producing any narcotic effects. The pod, when powdered, forms *Cayenne pepper*, which is a powerful stimulant. I have been informed that it is used with the best effect as a horse medicine in the East Indies; but could not learn precisely what the complaints were in which it was employed, though I believe it was the *flatulent colic*, or *gripes.* It has been successfully given in cases of flatulency,

weakness of the stomach, and indigestion, in doses of a scruple or half a dram, joined with a little powdered aniseed, liquorice, and syrup, so as to form a ball. (See Cordials.)

It appears, however, to be inferior to good ginger as a cordial and stimulant, though more pungent or acrimonious.

CARAWAY SEEDS.—*Carui Semina.* These seeds are much used in veterinary practice, as a *cordial* and *carminative.* The essential oil, which contains all the virtues of the seed in a concentrated state, is the most convenient for veterinary purposes, the dose of which is from half a dram to a dram: it may be mixed either with ale, milk, or water, into a drench; or formed into a ball with liquorice powder, ginger, and honey. When the seeds are made use of they should be powdered, but never boiled in any liquid, according to the practice of farriers, as their virtues are thereby in a great measure evaporated: nor should they be purchase› in powder; for by being kept in that form, thei. essential oil is gradually dissipated.

In whatever form it may be used, *caraway* is certainly an useful *cordial* and *carminative.* The dose of the *seed* is about an ounce; to which may be added a dram or two of powdered ginger. It may be useful to observe, that from twenty to thirty drops of *oil of caraway* are an useful addition to aloes, in making a purgative ball; or, as it is commonly termed, a *dose of physic.* (See Cordials, Carminatives, and Cathartics.)

Though the essential oil is the most convenient form for giving caraways, it is not perhaps so grateful to the stomach, or likely to produce so gradual or durable a stimulus as the *recently* powdered seeds. Caraways, though unpowdered, lose much of their power by long keeping, especially in damp places. When the essential oil is employed, that which is pure should be chosen, as it is often adulterated with spirits of wine. The best manner of mixing the oil is to rub it in a mortar with sugar and treacle, and to add the ale or water gradually. Or it may be mixed in the proportion of one part of the oil to three of spirit of wine, and kept as an essence of caraway: this, when mixed with ale or water, will be more uniformly diffused through the liquor than the oil alone, which will immediately float on the surface.

CARBON. Charcoal. *Carbo Ligni.* Recently prepared charcoal is an antiseptic, and may be made into a poultice with linseed meal, and applied to foul, offensive ulcers, for the purpose of correcting their fœtor.

CARBONATE OF LEAD. See Ceruse.

CARBONATES. Combinations of alkalies, earths, or metallic oxides, with carbonic acid, such as carbonate of potash, carbonate of lime, carbonate of lead, &c. (See Potash, Lime, Lead, &c.) The carbonates always preserve their alkaline properties in some degree, and are decomposed by all the acids, forming a brisk and colourless effervescence.

CARBONIC ACID GAS, is transparent, colourless, without any odour, irrespirable and incapable of supporting combustion. In medical practice this air has been employed, on account of its *antiseptic* quality, in foul and fœtid ulcers, or in gangrenous wounds. It is generally applied by means of a fermenting poultice, composed of oatmeal and yeast. This poultice has been found serviceable in that disease of the horse's heels termed grease, generally correcting the offensive smell which attends it. (See my Veterinary Dictionary.)

CARDAMOM SEEDS.—*Cardamomi Semina.* The plant from which these seeds are obtained is a native of India. There are two sorts of cardamoms, the *greater* and *lesser:* the latter are commonly sold in their shells or pods, from which they are easily freed: these are preferred in medical practice, probably on account of their more grateful smell and taste, but the larger sort, which are generally termed *grains of paradise* (see Grains of Paradise), are better for veterinary purposes, being a stronger stimulant, and much cheaper. The lesser cardamoms make an excellent cordial, and are possessed of considerable strength. The dose is from one to two or three drams.

CARDIACS. See Cordials.

CARMINATIVES. Medicines that correct flatulency in the stomach and bowels. The disorder for which carminatives are employed is named *flatulent* or *spasmodic colic*; also *gripes, fret,* and *botts.* This disease frequently happens to horses,

and from the nature of it not being understood, often proves fatal. We constantly hear of horses dying of inflammation of the bowels, and this is really the case, but the inflammation is produced by the flatulent colic. When air or wind is generated in the horse's stomach it cannot escape upwards as in man, and is prevented from passing in the other direction by a valvular structure at the part where the small intestines terminate; that is, in the cæcum or large intestine, which in the horse is very capacious. As the air accumulates it distends the stomach and small intestines, and if they have not sufficient energy to overcome by their contractile power the resistance made by this valvular structure, inflammation takes place, and the animal dies. Carminative medicines increase for a short time the vital power of the stomach and small intestines; put a stop to the process by which air is generated; excite them to more vigorous contractions; and enable them to overcome the obstacle above described, and expel the confined air. It is in this way that carminatives cure the flatulent colic. Sometimes, however, carminatives prove ineffectual, not often from a want of power in the medicine, but from a circumstance that is not sufficiently attended to, that is, from an accumulation of excrement in the large intestines, especially the cæcum, by which the valvular aperture above noticed is so plugged up as to render all the efforts of the stomach ineffectual. The distension of the small intestines then

causes inflammation, which soon terminates in death. The only remedy in such cases is clysters, and these, if properly and seasonably administered, will always cure the disorder. (See Clysters.) The carminatives usually employed are by far too strong; they often cure the disorder, but always increase the tendency to it by impairing the tone of the stomach. Large doses of turpentine and other essential oils are injurious in this way, also pepper and other strong stimulants. I believe there is not a more effectual carminative, and certainly not a more innocent one, than diluted brandy, rum, or gin. The dose from four to six ounces, mixed with twelve ounces of water. Horses that have been accustomed to take cordials or beer can bear six ounces, with perhaps only eight or ten ounces of water; but those who have not been in the habit of taking such things will do better with only four ounces of spirit, and twelve of water. Daffy's Elixir is often employed for flatulent colic, but it is not so good a remedy as the spirit and water, and is liable to injure the stomach. It is nothing more than a compound tincture of senna, and if made with old spirit, whether brandy, rum, or gin, there would be no objection to its use except the expense, for the spirit is the only useful part of it. If Daffy's Elixir, however, should be made as tinctures too often are, with a mixture of spirit of wine and water, though it cure the disease, it must injure the stomach, as the spirit is so loosely combined with the water that it separates in the

stomach, and increases that state or condition on which the disorder depends.* (See vol. i.)

CARMINATIVE MIXTURES.

No. 1.	Best cogniac brandy	4 to 6 oz.
	Hot water	10 or 12 oz.
	Mix for one dose.	
No. 2.	Anodyne carminative tincture	2 to 4 oz.
	(The receipt for this tincture will be found under the article Anodyne.)	
	Hot water	8 or 10 oz.
	Mix.	
No. 3.	Tincture of opium	½ to 1 oz.
	Essence of peppermint (see Peppermint)	1 dr.
	Water	10 or 12 oz.
No. 4.	Oil of turpentine	4 oz.
	Gruel	10 or 12 oz.

Mr. Bracey Clark recommends above all other remedies, a tincture of allspice, made by digesting one pound of bruised allspice in three quarts of proof spirit. Of this he gives four ounces in a little water every hour until the horse is relieved. It may not be superfluous to observe, that the strength of the carminative prescriptions or receipts

* Flatulent colic is generally attended with a stoppage of urine, which is caused by the distended bowels pressing down the body of the bladder, at a time when there is probably only a moderate quantity of urine in it, below the brim of the pelvis, and in that way the animal is prevented fromo viding his urine.

is according to the number affixed, and that the strength of the remedy should rather be adapted to the habits of the horse, than to the violence of the symptoms. A horse, that has had several attacks of the disease, and has taken the violent doses commonly employed, may require number 4, especially if numbers 2 and 3 have been found ineffectual. It is of great importance, however, to apply clysters effectually; and the subordinate remedies are pointed out in vol. i. Bleeding according to circumstances is likewise a matter of importance.

CARROTS.—*Dauci Radices*. Carrots are sometimes used as an article of diet, and may be given in moderate quantity, with great advantage, to horses that are thick-winded, have coughs, or are disposed to inflammatory complaints, such as grease, inflamed eyes, &c. They appear to be easy of digestion, and very nutritious. They are excellent food for young stock, but will not do for horses that are hard worked.

CASCARILLA BARK.—*Cascarillæ Cortex*. This tree is a native of the Bahama Islands, and is likewise found in Jamaica and St. Domingo. The bark has a fragrant spicy odour, and emits when burning a smell like that of musk. It is sometimes joined with cinchona, colombo, gentian, or other bitters, and sometimes given with cordials. According to Dr. Paris, cinchona, cascarilla, and other medicines which contain tannin and the gallic acid, or, in other words, which strike a black colour with iron, are decomposed by the sulphates. According

to this doctrine, cascarilla would be what he terms an *incompatible* ingredient with the sulphates of iron, of copper, and of zinc. The dose of cascarilla is one, two, or three drams in powder.

CASSIA BARK.—*Lauri Cassiæ Cortex.* The tree from which this bark is obtained is a native of Malabar, Ceylon, Sumatra, and Java, and has by some been accounted a variety of the cinnamon-tree, the odour of which it in some degree resembles. It is sent to this country in sticks or quills; is of the colour of cinnamon, and, if broken, appears to consist of two distinct rinds or barks, the inner of which is darker than the outer, and possesses the flavour of cinnamon, though a little more pungent, whilst the outer has scarcely any taste whatever. There are some fine pieces of *cassia* which so nearly resemble cinnamon, as not to be easily distinguished from it, and are frequently sold for it in the shops. For every veterinary purpose *cassia* is equal to cinnamon, provided it is well chosen: such parts should be selected as have a pleasant, sweetish taste succeeded by one extremely hot and pungent: this is generally found in the thinner pieces, which are curled up like cinnamon.

Cassia is a strong aromatic stimulant, and an efficacious ingredient in cordial preparations. The dose is from one to two drams. An essential oil is obtained from cassia, which bears a high price, but is so excessively powerful, that two drops on a lump of sugar will impart a strong taste to half a pint of water.

CASSIA BUDS. These nearly resemble cassia in their taste and medical qualities, and may be used for the same purposes.

CASTOREUM. Castor. This substance is obtained from the beaver. It is contained in follicles situated between the anus and pudendum, four in number, the two undermost containing the real castor, the two uppermost a fatty substance, by which castor may be distinguished from a spurious counterfeit, made by inserting certain resinous substances mixed with a little castor, into the scrotum of a goat. The bags are cut entire from the beaver, and then dried in smoke; they should be dry, roundish, heavy, and filled with a tough or brittle dark-brown substance, contained in membranous cells. Castor has been extolled by some practitioners as an antispasmodic and sedative; while others have doubted its efficacy. It is very seldom used as a horse medicine; nor does it seem likely to be much employed, there being cheaper and more certain medicines of the same class. In old veterinary or farriery books, castor is prescribed in spasmodic diseases, such as convulsions or locked-jaw. Gibson and Bartlet direct half an ounce to be given at a dose. Castor is brought from Russia and from Canada; the former is considered the best, but is now scarce.

CASTOR OIL.—*Oleum Ricini.* Castor oil is obtained by boiling, or by expression from the seeds of the ricinus or palma christi, a plant found in the East and West Indies, in Greece, South America,

Africa, and on the Rock of Gibraltar. The former method was generally used till lately, and was performed by tying up the seeds in a bag, (having previously taken off the bark and bruised them,) and suspending the bag in boiling water till all the oil was extracted and rose to the surface, when it was skimmed off; but it is now more generally obtained by pressure like that of almonds or olives. The castor or ricinus seeds are a strong purgative. The best castor oil is made in England from cold blanched seeds with the eye taken out. It is said that the dark-coloured castor oil, brought from the West Indies, is bleached or rendered colourless by some process in this country, and sold as cold-drawn castor oil. Castor oil is an excellent purgative, as it opens the bowels without producing griping or irritation. It is therefore peculiarly suited to those disorders of the intestinal tube which require laxatives, and is perhaps not so serviceable where it is intended to produce a determination of blood to the bowels, in order to relieve an inflammatory affection of some other part. The dose is from half a pint to a pint, or a pint and a half.

It has been asserted that *castor oil* is a good remedy for worms; but I have seen it given for this complaint without effect. (See Anthelmintics, also vol. i.) It has been suggested that either olive or linseed oil may be substituted for castor oil; perhaps they are inferior as laxatives, but so much cheaper that they ought to be fairly tried. (See Laxatives.)

CATAPLASM.—*Cataplasma*. See Poultice.

CATECHU. See Acacia Catechu.

CATHARTICS or PURGATIVES. Medicines that cause purging. The preparations employed for this purpose are commonly termed physic. Previously to physicking a horse, he should be fed with bran mashes for two or three days, and have moderate but regular exercise, or be worked with moderation. He should be allowed only a moderate quantity of hay, especially if he has a voracious appetite: and if inclined to eat his litter he should be prevented by a muzzle, or by being tied up to the rack in the day-time, or what is still better, by having his litter removed during the day, and by applying the muzzle at night after he has eaten his allowance of hay. If in low condition some oats may be mixed with the bran mashes; but eight to ten pounds of good hay are a sufficient allowance for a day and night. On the morning when the physic is given, neither hay nor mashes should be allowed, until two or three hours after it has been taken. Some practitioners, however, direct a small thin mash of bran only to be given about an hour after, for the purpose of dissolving or mixing with the physic. This, however, is unnecessary, though supposed to render the effect milder and more expeditious: but this is not the case; physic should be given fasting. During the day the horse may have walking exercise for about half an hour, and once only, and be fed with bran mashes, and have the chill taken off his water. Grooms generally consider exercise unnecessary or improper on the day the

physic is given: and on the following day, when the medicine generally operates, they are apt to give too much exercise. But as soon as the purging has taken place in a sufficient degree, which is generally the case about the afternoon of the day after it is taken, exercise is unnecessary or improper; and should the purging continue or be found to be going on the following morning, that is, on the morning of the third day, including that on which the medicine was given, it should be restrained by gruel made of arrow-root or fine wheat flour, with which the horse should be drenched if he refuse to drink it. Should the purging continue after this, about half an ounce of tincture of opium may be given with a hornful of gruel.

Horses sometimes appear sick, and refuse their food after taking physic, either during the afternoon or evening of the same day, or the following morning. This is generally caused by a neglect of the preparation above directed, by the stomach being loaded at the time the physic is given, or by the horse feeding improperly too soon afterwards; and not unfrequently by the physic being too strong. When this sickness is observed, the horse should have walking exercise; and if it be on the same day the physic is taken, and the uneasiness be considerable, let a clyster be administered; nothing more is necessary. Should it continue, however, the following morning let him be again exercised, and have some water with the chill off; and if the purging does not come on, and he appears to make

fruitless efforts to dung, let the clyster be repeated, which, with a repetition of the exercise, will generally produce the desired effect. A horse should be clothed and not exposed to rain or cold wind during the operation of physic; and when its operation has ceased, he should be gradually brought back to his usual diet and work. Aloes is the only purgative medicine that can be depended upon for horses, and though Socotrine aloes is generally considered by medical practitioners the mildest kind, and that which should be chosen, I have for many years used the Barbadoes aloes, and have found it equally safe and mild, and more effectual than the Socotrine, when given in a proper dose, and assisted by judicious management. (See Aloes.)

Gibson, Bracken, and other veterinary authors, have prescribed jalap and cream of tartar in their purging balls. It has been proved, however, that jalap has but little effect on the horse, even in a large dose (see Jalap); and that cream of tartar, which was supposed to prevent griping, by correcting the acrimony of the aloes, is absolutely useless. Whether the combination of aloes and jalap with calomel, or of aloes with scammony, gamboge, or elaterium, is more efficient than aloes alone, or aloes and calomel, in cleansing the alimentary canal from worms and other offensive matter, and of giving activity to the lacteals (see vol. i. Anatomy of the Internal Organs), has not, perhaps, been correctly ascertained. I am inclined to believe, however, that for this purpose a mixture of Barba-

does aloes, calomel, soap, and ginger, is as effectual as any. The neutral salts, such as sulphate of soda, and sulphate of magnesia (Glauber's and Epsom salts), are sometimes employed by veterinary practitioners, especially in France; but the large dose required to produce a purgative effect (seldom less than 12 oz. or 1 lb.), and the difficulty and trouble in giving them, prevent their being much used in this country. When a horse can be brought to drink a weak solution of Epsom salts, suppose 1 lb. to a large pail full of water, a diuretic effect is generally produced, and the dung a little softened; but when purging is necessary, nothing of the sort should be depended upon. Common salt is an excellent cathartic for cattle, and sometimes requires to be strengthened by three or four drams of aloes. The dose of common salt for cattle is the same as for the horse, that is, from four to six ounces in one quart, or more, of whey or water. Cathartics are a most important class of medicines: and of all cathartics Barbadoes aloes is the best. Diuretics may be more frequently required, but if we consider the purpose for which these two classes of medicine are given, it is difficult to say which is most important. Cathartics improve digestion and chylification, by cleansing the intestines and unloading the liver, and if the animal is afterwards properly fed, will improve his strength and condition in a remarkable degree. Diuretics carry off the excrementitious matter of the blood by the kidneys, and thereby produce a

similar effect, but not in so essential or permanent a manner; for if the system of feeding, which rendered the blood impure, be continued, it will soon return to its original state. Cathartics are always useful when the appetite and digestion are bad, and this is known by a voracious or depraved appetite, both for food and for water; rumbling of the bowels, and a frequent discharge of wind from the anus. This is the case in a remarkable degree with broken-winded horses, and generally in such as have chronic cough, or are crib-biters. Cathartics should not be given too strong or too frequently, as they may thereby weaken instead of strengthen the digestive organs, and produce the effect they were intended to remove. Cathartics should always be made with soap, in the following manner, and then, if given upon an empty stomach, they will be carried off, and will not be dissolved until they get into the large bowels, where their effect is intended to be produced: that is, carrying off all the excrementitious matter that may be lodged in them. When given in this way they never produce sickness or pain in the stomach, but always operate without pain or danger.

CATHARTIC BALL.

Barbadoes aloes, powdered	4 dr. to 1 oz.
Hard soap	3 to 4 dr.
Ginger	1 dr.
Water	1 dr.
Oil of cloves	10 drops.

Beat the soap, oil of cloves, and water together in a mortar, so as to form a paste; if necessary use more water. This being done, add the powdered aloes and ginger, and beat the whole into a ball.

I have seen much harm done by strong doses of physic, and have often found the weakest dose, even half an ounce of aloes with the other ingredients, produce an excellent effect.

Other formulæ for carthartics have been given in former editions, but they differ only from the above in containing some other essential oil, such as oil of caraways or anise-seeds, and in being made by means of syrup; some of them contained also soda, but soap is preferable, and the formula I have now given is the best that can be employed. When wanted as an anthelmintic, a dram of calomel may be given the preceding night, or added to the ball. Stomachic purgatives are made by adding rhubarb, colombo, or cascarilla to a small dose of aloes; but I am inclined to believe that whenever the state of the stomach and bowels is such as to require a cordial or warm cathartic, opium is the best cordial that can be employed for the purpose.

Stomachics may be given, if required, after the operation of the carthartic. (See Stomachics.) Horses are more easily purged in the moulting season than at other times, that is, in April and in September. At these times the bowels are weak, and a small dose should be given. Mr. Bracey Clark's method of mixing aloes for physic is most easy: and if ginger and some essential oil are not

necessary, which he says is the case, his method may be the best; especially if the physic is wanted to act only on the large bowels. Soap as well as soda and potash promotes the solution of aloes, and causes it to act on the small bowels, and probably sometimes on the stomach also, as appears from the sickness it sometimes induces when thus mixed. This quickness of solution, however, is certainly desirable when there are worms in the small bowels, and in cases where a speedy operation is desirable. The method Mr. Clark recommends, is to put with any quantity of aloes, broken into small pieces, one fifth part by weight of treacle, and keep the vessel containing it in boiling water, until the aloes are melted and incorporated with treacle. It is necessary to stir the mixture well after it has been in the boiling water a short time, and when perfectly melted and incorporated, Mr. Clark directs it to be poured into paper moulds. I have found, however, that by pouring the mixture upon a marble slab or plate, previously greased with butter, it soon acquires a proper consistence to be formed into balls.

Under the head "Drenches" will be found directions for making liquid purgatives.

CAUSTICS are substances that burn or destroy parts to which they are applied. The most powerful is the red-hot iron, or *actual cautery*, which is often employed in veterinary practice to remove spavins, &c. (See Firing.) Many of the other caustics are possessed of great strength, and speedily destroy those parts to which they are applied: such

are the pure alkalies, *potash*, and *soda*; the *sulphuric* and *nitrous acids*, or a solution of *silver*, *quicksilver*, or *copper*, in *nitrous acid*. If a solid caustic is wanted, nothing is more convenient than the *lunar caustic* (*nitrate of silver*). The milder caustics are more frequently useful than those we have mentioned; such as blue vitriol (*vitriolated*, or *sulphate of, copper*), red precipitate (*nitric oxide of mercury*), burnt alum, verdigris, &c.

The strong caustics are employed to destroy unhealthy or diseased parts, such as warts and other excrescences, cleansing foul ulcers and sinuses, so as to bring them to a healthy state, and curable by more simple applications. Caustics may be divided into liquid and solid, strong and mild. The mild caustics are also called escharotics, and are more useful than the stronger caustics, which are too violent in their action in many cases, and often require to be diluted with water, spirit, or unctuous substances, according to the nature of the case.

SOLID CAUSTICS, STRONG.

No. 1. The red-hot iron. (See Firing.)
No. 2. Pure potash with lime.
No. 3. Nitrate of silver, or lunar caustic.
No. 4. Nitrate of copper.

MILD CAUSTICS, SOLID.

No. 1. Acetate of copper, or distilled verdigris.
No. 2. Sulphate of copper, or blue vitriol.
No. 3. Red nitrated quicksilver, red precipitate, or nitric oxide of mercury.

No. 4. Burnt alum.
No. 5. Common verdigris.

Remark.—The strong caustics are generally sold in a convenient form for application; but the *mild* require to be finely powdered and sprinkled on the ulcer: they are sometimes mixed with digestive ointments to increase their power.

STRONG CAUSTICS, LIQUID.

No. 1. The sulphuric and nitrous acids, which are very powerful, and must be used cautiously: they may be diluted with different proportions of water, so as to be applicable to many purposes.

No. 2. Nitrous acid .... 1 oz.
Quicksilver .... ½ oz.*

Place them in a large gallipot, or open phial, and take care to avoid the noxious fumes which arise. When the quicksilver is perfectly dissolved, and the mixture cold, it may be put into a small phial and corked.

Remark.—This is a strong and efficacious caustic; it is a certain remedy for the foot-rot in sheep, and often effectual in canker of the horse's foot, provided these complaints are properly managed in other respects. It is sometimes mixed with melted hog's lard to form a strong detergent ointment, or diluted with water.

* Red precipitate or nitric oxide of mercury may be substituted for quicksilver.

No. 3. Nitrous acid .... 1 oz.
Verdigris .... ½ oz.—Mix.

This caustic is very little, if at all, inferior to the former, and applicable to the same purposes.

No. 4. Muriate of antimony, or butter of antimony.

No. 5. Muriate of quicksilver, or sublimate .... 1 dr.
Muriatic acid .... 2 dr.

Remark.—This is a very powerful caustic, and always requires dilution. Yellow arsenic, mixed with lime and grease, or egyptiacum, or hog's lard, is sometimes used as a caustic to destroy warts, or cure fistula or poll-evil.

MILD CAUSTICS, LIQUID.

No. 1. Solution of blue vitriol.

No. 2. Any of the stronger caustics, except butter of antimony, diluted with an equal quantity, or more, of water.

No. 3. Muriatic acid.

No. 4. Muriate of iron.

CAYENNE PEPPER. See Capsicum.

CENTAURY.—*Centaureum.* This herb is a weak bitter, and of no use in veterinary practice.

CERATE.—*Ceratum.* A term given to certain ointments or salves, in which *wax* is an ingredient. It is necessary that the oils or fat with which they are composed be perfectly fresh, and preserved in this state.

CEREVISIÆ FERMENTUM See Yeast.

CERUSE.—*Plumbi Subcarbonas.* This is a

carbonate, or white oxide of lead, and is commonly called *white lead*. It is a very strong astringent, and is sometimes used in ulceration of the heels, when the discharge is thin and acrimonious.

It is generally made into an ointment with hog's lard and oil; but perhaps would be found more useful if used in the form of a fine powder. (See Lead.)

CETACEUM. Spermaceti. This is demulcent and emollient, but is not used internally in veterinary practice. Its chief use is in the formation of ointments.

CHALK.—*Creta*. This is an antacid and absorbent. It should be finely levigated, or *prepared*, as it is termed, before it is administered internally. It may be given in diarrhœa, combined with opium and ginger, after the irritating matter has been removed from the intestines by purgatives. Externally it may be sprinkled upon sores which emit an excoriating discharge, in order to preserve the adjacent parts from its effects. The dose, internally, is from two drams to an ounce. (See Astringents.)

CHALYBEATES. Preparations of steel or iron. (See Iron.)

CHAMOMILE. See Camomile.

CHARCOAL.—*Carbo Ligni*. A charcoal poultice has been recommended as an application to the heels when affected with grease, with a view, perhaps, to destroy the offensive smell of the matter discharged from the heels.

CHARGES. Adhesive plasters which are softened or liquefied in a ladle by a gentle heat, and then applied to the legs, from the knee and hock joints to the foot, as a remedy for windgalls and old lamenesses, arising from strains or hard work, or to the back in strains of that part. As soon as the plaster is applied, the part is covered with short tow, and the horse sent to grass.

A Charge.

No. 1.	Yellow rosin	2 oz.
	Burgundy pitch	4 oz.
	Barbadoes tar	2 oz.
	Bees'-wax	3 oz.
	Red lead	4 oz.
No. 2.	Yellow rosin	1 lb.
	Bees'-wax	8 oz.
	Common turpentine	2 oz.
	Armenian bole powdered	4 oz.—Mix.

The three first are to be melted together, and then the latter is to be added. The mixture is to be constantly stirred until sufficiently cold to be applied ; and if it prove too thick when cold, it may be softened with a little oil or lard.

Farriers generally mix dragon's blood (as it is commonly called), from an idea that it has a strengthening quality ; others recommend bole armenic. It appears, however, that charges act as a bandage only, compressing equally, and for a considerable time, the joints, tendons, &c. (See my Veterinary Dictionary.)

CHEWING BALLS. These are composed of

the wood of the bay and juniper tree, assafœtida, liver of antimony, and pellitory of Spain. The only modern writer on veterinary medicine, who has advised the use of chewing balls, is Mr. Wilkinson, in his observations on catarrhal complaints. (See my Veterinary Dictionary, article Mastigadour.)

CICUTA. Hemlock; which see.

CINCHONA. See Bark.

CINNABAR, or RED SULPHURET OF QUICKSILVER. — *Hydrargyri Sulphuretum Rubrum.* A heavy mineral of a dark red colour, sometimes prepared artificially. It is composed of quicksilver and sulphur, called red sulphuret of mercury, and has been employed as an alterative in obstinate coughs and thickness of wind, in doses of half an ounce daily. Cinnabar is the least active of the mercurials.

CINNAMON.—*Cinnamomi Cortex.* The cinnamon tree is a native of the East. The bark is rolled into cylinders and exported in this state. This well known spice is a powerful stimulant, and an excellent cordial: its high price, however, prevents its being used much in cordial preparations; so that when good cassia can be procured, it may be on all occasions substituted for it in veterinary practice. (See Cassia.) Oil of Cinnamon is made by macerating cinnamon in sea water for forty-eight hours, then distilling it with a gentle heat and separating the oil from the water with which it comes over.

CLOVES.—*Caryophilli.* A stimulant of con-

siderable strength, but seldom employed in veterinary medicine, on account of its high price. The essential oil of cloves is sometimes used, in the dose of ten or twenty drops, in cordial preparations, or in purgative medicine, to prevent sickness or griping. It is an excellent cordial.

CLYSTER or GLYSTER.—*Enema.* This useful remedy is not employed as often as it ought to be, and seldom properly or effectually. In flatulent colic it is essentially useful, and it is from this circumstance being too little known, or not attended to, that flatulent colic sometimes terminates in inflammation of the bowels and death. (See Carminatives.) In suppression or retention of urine, or in difficulty of staling, a clyster is the best remedy that can be employed. In short there is scarcely a disease to which horses are liable, in which clysters may not be advantageously used, either as a principal remedy, or as an auxiliary to others. The clyster syringes commonly employed are worse than useless, because they sometimes prevent a clyster being given when it is absolutely necessary, especially in flatulent colic, as I have explained under the article Carminatives. The clyster pipe and bladder is the only effectual apparatus I have seen. The pipe should be one inch in bore, and fifteen inches in length. The quantity of liquid employed should be five or six quarts, and consist only of warm water or gruel, with half a pound of salt dissolved in it: or three or four ounces of senna leaves may be put into boiling

water instead of the salt. There is sometimes difficulty in introducing the pipe, generally from hard excrement in the straight gut; sometimes, however, from the bladder being distended with urine. In such cases patience and care are necessary to exhibit the clyster effectually, and it may almost always be accomplished without raking or drawing out the hard excrement with the hand; there is no objection, however, to this operation, and when a clyster pipe is not at hand, it must be employed as a substitute for a clyster. (See Raking.) The simple emollient clyster should be thin gruel, or warm water only. The anodyne or opiate clyster should be composed of three or four ounces of tincture of opium in two quarts of gruel, or warm water. Gibson gave half an ounce of solid opium dissolved in water, as a clyster to a horse in locked jaw, with success. Nourishing clysters are composed of arrow-root, or wheat flour gruel with sugar, or broth thickened with flour. Tincture of opium is an useful addition to such clysters, especially in locked jaw. (See my Veterinary Dictionary.) When clysters are intended to cause an evacuation of fæces, they should be administered in large quantity, so as to distend and irritate the rectum; but if they are meant to be retained, the quantity injected should be but small.

COLCHICUM. AUTUMNALE. See Meadow Saffron.

COLLYRIUM, or EYE WATER. Any liquid preparation applied to the eyes is termed a

collyrium. Those in most general use in veterinary practice are the following :—

Sulphate of zinc	2 dr.
Super-acetate of lead	$2\frac{1}{2}$ dr.
Water	1 pint.

Should the eye be much inflamed, painful and irritable, this lotion may be further diluted with water, and should be applied in a tepid state; but if, after violent inflammation, the eye remain languid and inert, and vision seem to be impeded from a relaxed state of the vessels of the eye, it may be rendered stronger by the addition of one or two ounces of brandy, or an equal quantity of the vinous tincture of opium.

No. 1.	Sulphate of zinc	1 dr.
	Water	1 pint.
	Dilute sulphuric acid ..	2 drops.—Mix.
No. 2.	Super-acetate of lead ..	4 scr.
	Water	1 pint.
	Distilled vinegar	2 oz.—Mix.
No. 3.	Sulphate of zinc	1 dr.
	Super-acetate of lead ..	4 scr.
	Water	1 pint.—Mix.

After shaking the ingredients together, so as thoroughly to incorporate them, filter them through blotting paper. These lotions are astringent, and are useful in relaxations of the vessels of the conjunctiva.

Take of....	Sulphate of copper ..	24 gr.
	Rose-water	$\frac{1}{2}$ pint.

Dissolve the copper in the rose-water, and add a few drops of ammonia to precipitate it. In order to dissolve this precipitate, pour on it a still greater quantity of ammonia, until the solution becomes clear and of a blue colour. This collyrium may be used for removing recent specks on the cornea.

Take of.... Sulphate of copper.
Nitrate of potass (nitre).
Sulphate of alum (alum) equal parts.

Dissolve these substances together in an earthern vessel, and add of powdered camphor $\frac{1}{24}$ part.

When the camphor is dissolved, pour the whole gently upon a marble slab, warmed and greased, and before the composition becomes hard, cut it into small pieces and keep them in a well-stopped bottle. Three drams may be dissolved in half a pint of water to form an astringent collyrium.

By some, collyria are divided into dry and liquid; the dry are powdered salt or sugar, blown into the eye by means of a quill; crude sal ammoniac (muriate of ammonia), white vitriol (sulphate of zinc), powdered alum, &c. (See Eye Water, also vol. 1 and 3, and my Veterinary Dictionary.)

COLOCYNTH, or BITTER APPLE.—*Colocynthis.* This plant is a native of Turkey, and bears a fruit nearly the size of an orange, which, when ripe, is peeled, dried in a stove, and thus exported. It is a violent purgative in the human system, but said to be quite inert in the horse.

COLOMBO. — *Columbæ Radix.* A good stomachic bitter, much used in human medicine;

and though rarely employed in veterinary practice, seems to be worth a trial in cases of indigestion and flatulency. (See Columba Root.)

The dose is three or four drams or more: it would perhaps be more effectual if joined with ginger or cassia. (See Tonics and Stomachics.)

COLOPHONY. Yellow resin, when the essential oil has been driven off by distillation.

COLTSFOOT.—*Tussilago*. Though this plant was once considered as an useful remedy in coughs, it is now totally disregarded.

CONIUM MACULATUM. See Hemlock.

CONTRAYERVA.—*Contrayerva*. The root is considered by medical practitioners as a mild diaphoretic and cordial, but is never used in veterinary practice.

COPAIBA. See Balsam of Copaiba.

COPPER.—*Cuprum*. This metal is a component part of blue vitriol (*sulphate of copper*) and verdigris, two valuable preparations. (See Blue Vitriol and Verdigris.)

COPPERAS.—*Sulphas Ferri*. A term formerly employed, and still used in the arts, for sulphate of iron, or green vitriol, which has also, when purified, been named salt of steel (*sal martis*), and vitriolated iron. Sulphate of zinc has also been named white copperas, but more commonly white vitriol.

CORAL.—*Corallium Album et Rubrum*. These act only as *absorbents*, and were formerly accounted *anthelmintic*.

CORDIALS. There are no medicines more frequently employed than cordials and diuretics, and none, perhaps, speaking generally, that do more harm, though productive of temporary good when judiciously employed. But with respect to cordials, it is necessary to inquire what are the circumstances which render them necessary, and then we shall soon learn that it is immoderate work, and bad management in regard to feeding; by the latter is meant the bad quality, as well as the immoderate quantity, of the hay that is often given. This is the most prevailing error in feeding. Next to it is that of not allowing a sufficient quantity of *good* oats, or not properly proportioning the allowance to the horse's labour; and thirdly, by giving too much at a time, and hindering digestion by putting the horse to work immediately after feeding, or by feeding irregularly, or not observing a proper method of distributing the daily allowance of food. When a horse eats more hay than is sufficient, thirst is excited, and if he is allowed to drink too much, he is induced to eat a still greater quantity of hay; and thus the evil is increased. The use of cordials, on such occasions, is to give temporary energy to the stomach and bowels, and enable them to discharge their laborious duties. But how is this done? by an unnatural excitement of the nervous system. The other circumstance which renders cordials necessary is immoderate work, which is of a more serious nature than improper feeding: it is a moral evil, and, if duly reflected upon, will, I trust, be seen in that light. When we consider the form of

the horse, it appears evidently that he was intended for the service of man; and it is equally clear, in a moral light, that it is the duty of man to treat him with kindness, and exact no more labour from him than is consistent with his health. Feeding him luxuriously is no excuse for working him unfairly, nor is there any advantage in it; for although we may thereby render him capable for a time of wonderful exertions, yet we shorten his life, and interrupt his abridged period of service by bringing upon him various diseases. It is often thought that a liberal allowance of oats and beans, a warm stable, good grooming, and a comfortable bed, will compensate for excessive labour; such management may enable the animal to do more than he otherwise could; but the power of the stomach is limited, and so is that of the muscular and nervous systems; so that, if we make an unfair demand upon them, and it is answered, their power is the sooner exhausted. Rest is the only real cordial; and a summer's run at grass is the best, if not the only, restorative. There is not, perhaps, a better cordial than about half a pint of good strong beer, or ale, with a little ginger grated into it. A wine-glassfull of brandy in half a pint of water is stronger, and may, on some occasions, be more useful, than beer; but I wish to impress on the reader, or rather to propose to him as a subject for consideration, that whenever a cordial appears necessary, we should give no more, or one of no greater strength, than is sufficient to produce the desired effect; and it will be found, I

think, that a much better effect may be produced by three or four small doses, or weak cordials, than by giving only one large dose.

CORDIALS.

No. 1. From half a pint to a pint of the best old mild beer, with a little grated ginger.

No. 2. Best cogniac brandy . . . .from 2 to 4 oz.
Warm water . . . . 6 to 12 oz.

No. 3. Anodyne carminative tincture (See Anodynes) . . . . 2 oz.
Water . . . . 6 or 8 oz.

No. 4. Allspice powdered . . . . 2 to 4 dr.
Caraway seeds (fresh) powdered . . . . 4 dr. to 1 oz.
Treacle enough to form the ball.

No. 5. Ginger powdered . . . . 1 dr.
Allspice powdered . . . . . . 2 dr.
Caraway seeds powdered . . 4 dr.

Treacle enough to form the ball. (See Introductory Chapter; also articles Alcohol and Tonics.)

The cordials No. 4 and 5 may be given as a drench with a little water; and if the cordials 1, 2, and 3, were sweetened with treacle or sugar, they would be more palatable to the horse, and probably have a better effect. The above cordials are as well suited to cattle as to horses; and though much stronger drenches are often given, these will be found, I think, of sufficient strength. When we consider the immense size of the rumen, or first stomach, of the cow, we may be led to think that

these animals really require the Herculean doses often given, and prescribed by writers on cattle medicine. But the internal surface of the rumen has a cuticular covering, and consequently possesses but little, if any, sensibility, to medicine; and it is evident from the structure and disposition of the passage by which the four stomachs communicate with each other, as well as from the structure and economy of the stomachs themselves, that drenches pass quickly into the *fourth* stomach, and that it is through the excitement produced upon this stomach, and upon the brain, that the muscular coat of the rumen, or first stomach, as well as the whole muscular system, is excited to more vigorous action. (See my Veterinary Dictionary.)

CORIANDER SEED.—*Coriandri Semina.* A weak aromatic stimulant, seldom used in veterinary medicine.

CORNU CERVI. See Hartshorn.

CORROSIVE SUBLIMATE. See Sublimate, Corrosive.

COWHAGE, or COWITCH.—*Dolichos Pruriens.* A pod produced by a plant growing in the West India Islands, and other warm climates, where it proves very troublesome to cattle and other domestic animals, on account of the spiculæ which grow upon the surface of the pods; these, when applied to the skin, excite a painful kind of itching. The *down* is said to be a good remedy for worms in the human body. I have given it to a horse in a dose of half an ounce, as a worm medicine; but it did not produce the slightest effect.

CREAM OF TARTAR.—*Super-tartras Potassæ Impurus*. See Tartar.

CRETA. See Chalk.

CROCUS. See Saffron.

CROTON OIL, or OIL OF TIGLIUM.—*Tiglii Oleum*. This oil is expressed from the seeds of a plant found in the Molucca Islands, and in some parts of India. It is of a reddish brown colour, and its taste is hot and stimulating. One drop proves a very powerful hydragogue cathartic in the human frame. Croton oil has been tried on horses and asses at the veterinary college: one dram, mixed into a ball with flour and syrup, was found sufficient to kill a horse, and half a dram an ass. In a dose of twelve or fourteen drops, it operated as a common dose of physic, but not more expeditiously. The farina of croton has been used as a purgative in veterinary medicine, and has been given to the extent of half a dram in cases of locked-jaw.

CUBEBS.—*Cubeba*. A species of pepper obtained from a plant found chiefly in Java. In man it is chiefly employed in the cure of gonorrhæa. I am not aware that it has been introduced into veterinary practice. Its properties are diuretic, stimulant, and slightly purgative.

CUCUMBER, WILD.—*Elaterium*. The fecula or mucilaginous part of this fruit is a violent purgative and emetic in the human subject, but has not been tried in the horse.*

* I have lately tried this medicine in doses from half a dram to one dram and a half. It produced no visible effect.

CUMMIN SEEDS.—*Cumini Semina.* A weak stimulant; but its essential oil is an useful cordial and carminative, in doses from half a dram to one dram.

CUPRUM. See Copper.

CUPRI ACETAS. See Acetate of Copper.

CUPRI SULPHAS. See Sulphate of Copper.

CUSPARIA BARK.—*Cuspariæ Cortex.* A good tonic and stomachic: the dose two drams or more, with ginger or aromatic powder. (See Angustura Bark.)

CUTTS or CUTCH. The name given to Catechu or Terra Japonica, by the natives of Hindostan.

DAFFY'S ELIXIR. A popular quack medicine, often given to horses as a remedy for flatulent colic, gripes, or fret, which it sometimes cures, being composed of proof spirit, in which senna, jalap, caraway-seeds, and ginger have been infused. It is by no means an eligible medicine, and should never be employed in this complaint. (See vol. i. article Colic.) When the remedies prescribed for this disorder cannot be obtained, a pint of warm beer with grated ginger, or a glass of gin or other spirit will be found a cheaper and a more effectual remedy than Daffy's Elixir; or, what is still more effectual, a pint of warm brandy and water; from four to six ounces of brandy to twelve ounces of water. Rum or gin may answer the same purpose diluted with water. (See Carminatives.)

DANDELION.—*Leontodon Taraxacum.* The root is by medical authors considered as a deobstruent, but is not employed in veterinary practice.

DAPHNES MEZEREI CORTEX. See Mezereon.

DATURA STRAMONIUM. See Thorn-apple.

DEADLY NIGHTSHADE. See Belladonna.

DECOCTIONS.—*Decocta.* These differ from infusions by the substance of which the decoction is composed being acted upon by a boiling heat. Some substances, however, are decomposed by being boiled, while others are rendered more easily soluble and their active principle more completely obtained by this process. All volatile matter is dissipated by being boiled. Decoctions can therefore only with propriety be composed of those substances which are neither decomposed nor volatilized by a boiling heat.

When more than one ingredient enters into the composition of a decoction, it is sometimes desirable not to boil them all together, but in succession, according to their different degrees of hardness; and, if any aromatic or volatile substance form a part of the decoction, the boiling liquid should merely be poured upon it, after the other menstrua have been properly decocted. Decoctions should be made in vessels of sufficient magnitude to prevent their boiling over, and, as they soon ferment and are spoiled by keeping, should be used soon after they are made. They should also be strained while hot, as some of them (the decoction of Peruvian Bark, for instance)

deposit, on cooling, an active and useful principle, from the circumstance of water at a boiling temperature being able to hold a greater quantity of matter in solution than when cold. As the object of decoction is to extract as much as possible of the virtues of certain substances, whatever they may be, it is advisable either to reduce them to powder, to cut them in small pieces, or to bruise them, before they are submitted to the process of decoction.

DECOCTION OF MARSH-MALLOWS.—*Decoctum Altheæ.*

Take of..	Dried marsh-mallows	6 oz.
	Water	7 lb.

Boil down to five pounds; strain the decoction, and, after the fœces have subsided, pour off the clear liquor.

As marsh-mallow roots contain nothing soluble in water but mucilage, this is merely an emollient, which may be administered in inflammation of the bladder or kidneys; in irritation of the mucus membrane of the stomach and bowels, or of the œsophagus and trachea.

DECOCTION OF CAMOMILE, COMPOUND.—*Decoctum Anthemidis Compositum.*

Camomile flowers, dried	1 oz.
Caraway seeds, bruised	1½ oz.
Ginger, bruised	1½ oz.
Water	1 qt.

Boil for ten or fifteen minutes; a good stomachic drench.

DECOCTION OF OAK BARK.—*Decoctum Quercûs.*

Oak bark, bruised	2 oz.
Water	1 qt.

Boil gently for ten minutes; a good vehicle for tonic medicine.

DECOCTION FOR FOMENTATION.—*Decoctum pro Fomento.*

This is made by boiling bay leaves, camomile flowers, wormwood, and southernwood in a sufficient quantity of water.

DECOCTION OF POPPY-HEADS.—*Decoctum Capsularum Papaveris.*

This is made by boiling the dried capsules, or heads of the white poppy, without the seeds, and broken up in small parts, in a sufficient quantity of water; *i. e.* about two or three ounces to a quart of water. This decoction is used as an anodyne fomentation.

DECOCTION OF BARLEY.—*Decoctum Hordei.*

Barley water is made by boiling pearl-barley in water. This may be used in fevers, either alone, or as a vehicle for nitre or other medicine. Various other decoctions are occasionally employed, and sometimes preferred on account of their cheapness, to more efficacious, but more expensive, medicines; yet, it must be recollected, that some vegetables, such as peppermint, penny-royal, &c., have their useful properties dissipated by much boiling, and should therefore be only simmered for a few

minutes, or only infused, as it is termed. (See *Infusions.*) It is a common practice with cattle doctors to boil their drenches in ale, by which the spirit of the ale, and sometimes the essential parts of the other ingredients, are in some degree evaporated. (See Drenches.)

DECOMPOSITION, is the separation of bodies which are combined by chemical affinity, and can only be effected by the agency of some substance or substances which have a stronger affinity for one or more of the constituents of the compound than these have for each other.

DEER'S SUET. This is sometimes prescribed by old authors, but does not differ from mutton suet.

DELIQUESCENCE. When any solid possesses so great an attraction for water as to absorb from the atmosphere a quantity sufficient to dissolve it, it is said to *deliquesce.* Those, again, that part with their water of crystallization until they become dry and fall into powder, are said to *effloresce.*

DELPHINIUM STAPHISAGRIA. See Stavesacre.

DEMULCENTS. Medicines which have the power of diminishing the effect of acrimonious or stimulating substances upon the sensible parts of the body. There are two sorts of demulcents: the one, possessing an oily or mucilaginous quality, sheathes the sensible part, and thereby defends it from the action of the stimulus; the other, being a watery fluid, dilutes the stimulus, and diminishes,

in a certain degree, its power. They are supposed to act when taken internally, not only by a direct application to the stomach and bowels, but also by being absorbed into the circulation, and through that medium on the lungs, kidneys, and bladder. Among the former may be reckoned gum arabic, gum tragacanth, and marsh-mallow, with various oils: the latter consists principally of water.

DEOBSTRUENTS. Medicines that remove obstructions. This class of medicines has been omitted by Mr. Murray and other modern writers on the Materia Medica.

DEPURATION. The purification of vegetable juices, &c.; the same meaning as clarification and despumation. The process generally consists in boiling and taking off the scum that rises on the surface; to promote this, the white of egg is sometimes employed. Some juices are depurated merely by being at rest, such as the juice of hemlock, when the foul parts gradually subside; others are purified by filtration or straining.

DESICCATIVES. Medicines, or rather applications, that dry up ulcers or running sores. The term is nearly obsolete.

DETERGENTS. A term employed in surgery for those applications which have the power of cleansing foul ulcers, and inducing a disposition to heal. They consist of caustics or escharotics diluted or mixed with water, unctuous substances, essential oils, or absorbent powders.

DETERGENT POWDERS.

No. 1. Blue vitriol (sulphate of copper) finely powdered .... 1 oz.
Bole armenic .... 2 dr.—Mix.

No. 2. Red precipitate (nitric oxide of mercury, or red nitrated quicksilver) finely powdered ..... 1 oz.
Burnt alum .... 2 dr.—Mix.

No. 3. Crystallized verdigris (acetate of copper) finely powdered .... 1 oz.

DETERGENT OINTMENTS.

No. 1. Ointment of nitrated mercury.

No. 2. Yellow basilicum (ointment of yellow resin)............... 2 oz.
Melt, and add oil of turpentine 2 dr.
Blue vitriol, finely powdered .. ½ oz.—Mix.

DIACHYLON. Litharge, or lead plaster, is made by boiling together olive oil nine parts, litharge five parts, water two parts, over a slow fire, and constantly stirring, until the oil and the litharge unite, and acquire the consistence of plaster. The water is intended to prevent burning or discolouration of the plaster, and must be replaced as it evaporates. Diachylon is an ingredient in sticking plaster, and charges, and is useful when spread on leather for defending a tender part from pressure.

DIACODION or DIACODIUM. A syrup made from a decoction of the heads of white poppies, or more readily by dissolving the extract of white

poppies in water, and forming it into a syrup by the addition of a sufficient quantity of sugar.

DIAGRIDIUM. A powder composed of scammony and jalap.

DIALTHEA. Marsh-mallow's Ointment. An ointment made from marsh-mallow's root, fenugreek seeds, palm oil, linseed oil, and resin. Sometimes lard and turpentine are added.

DIAPENTE. A compound powder much used by farriers, as a tonic or stomachic. It is composed of gentian root, bay berries, bay leaves, birthwort, myrrh, and shavings of ivory, of each equal parts: the last article, as well as the myrrh, are now generally omitted. This powder is very inferior to those formulæ or receipts which may be found in our Pharmacopœia. (Art. Tonics, and Stomachics.) Diapente is sometimes coloured with bole armenic.

DIAPHORETICS. Medicines that increase the natural discharge by the skin; which, when they act in so considerable a degree as to occasion sweating, are termed *sudorifics*.

It is extremely difficult to produce any visible effect upon the horse's skin by means of medicine alone; but when it is assisted by proper exercise and warm clothing, we can generally give a fine glossy appearance to the coat, though it is very difficult to produce sensible perspiration, unless it be by violent exercise and immoderately warm clothing. The most effectual diaphoretics in the horse, are medicines of the hot stimulating kind, combined with antimonial preparations and opium:

these, however, cannot be employed with propriety in fevers, which are generally an effect of internal inflammation; they are useful only when horses are hide-bound, have a rough dry coat, and appear in a state of debility. The effects of this class of medicines are so very uncertain in the horse, and so rarely succeed unless assisted by exercise, that it seems probable that exercise, a proper diet, and good grooming, form the only effectual diaphoretics. (See vol. i. article Fevers; see also Alteratives.)

Emetic tartar and other preparations of antimony, Mindererus's spirit, or water of acetate of ammonia, and camphor, are the diaphoretics which are employed in febrile complaints. (See Febrifuges.)

DIASCORDIUM, an astringent electuary, composed of bole armenic four ounces; scordium, or water germander, two ounces; cinnamon, one ounce and a half; strained storax, tormentil, bistort, gentian roots, dittany of crete leaves, galbanum, gum arabic, and red rose leaves, of each one ounce; long pepper and ginger, of each half an ounce; strained opium, three drams. These are to be dried, powdered, and sifted, and made into an electuary, with three pounds of syrup of white poppies. This electuary is sometimes given in the diarrhœa of cattle. The dose one or two ounces.

DIET. Nothing tends more to the preservation of the horse's health than proper management with respect to his diet; in the regulation of which it is necessary to consider the exertion or labour that is required from him.

It is a mistaken notion, that horses possess the highest degree of strength, of which they are capable while running at grass, in a state of nature; for there can be no doubt that the natural strength may be considerably augmented by high feeding and proportionate exercise, provided it be done gradually.

When a horse, however, is kept upon a full diet, and not allowed sufficient exercise, many dangerous diseases are engendered: to this cause may be attributed the frequency of his inflammatory complaints, and his most dangerous fevers may often be traced to this source: hence also originate swellings of the legs, grease, cough, inflamed eyes, and many other evils.

If a horse's work be moderate, his diet should be so likewise; but when his work is irregular, that is, when he is employed only once or twice a week, and then in hunting, or some violent and long continued exercise, his diet must be such as to render him at all times adequate to his work: above all things, regular exercise in the intermediate days is indispensably requisite.

Horses that work hard, and constantly, may be allowed a moderate quantity of beans with their oats; but on no occasion is barley a proper article of diet, unless boiled, or steeped for twenty or thirty hours in cold water; for, besides being of too heating a nature, it is liable to produce griping. Mr. Rogers, post-master of Southampton, has for several years fed his horses on soaked barley, mixed with chopped straw. It is not improbable, that a

horse may be *gradually* brought to eat barley, and when this is attempted, I would advise that it be given at first bruised and mixed with bran, or soaked according to Mr. Rogers' method.

This subject will be found more fully treated of in the first volume, and in my Veterinary Dictionary.

DIGESTIVES. Medicines which promote suppuration in ulcers, and cause them to discharge a white healthy matter. This term is commonly applied to ointments and other preparations which improve the state or condition of ulcers or sores, and cause them to discharge good matter. Medicines that promote the digestion of food are named tonics, stomachics, and cordials.

DIGESTIVE OINTMENT.

No. 1. Hog's-lard and strained turpentine, of each .... 4 oz.
Verdigris .... 1 oz.—Mix.

No. 2. Hog's-lard and Venice turpentine, of each .... 4 oz.
Sulphate of copper (blue vitriol) finely powdered .... 1 oz.—Mix.

No. 3. Ointment of yellow resin .... 4 oz.
Oil of turpentine .... 1 oz.
Nitric oxide of mercury (red precipitate,) finely powdered 1 oz.—Mix.

No. 4. Ointment of nitrated quicksilver .... 4 oz.
Oil of turpentine .... 1 oz.—Mix.

DIGITALIS. See Foxglove.

DILL.—*Anethum Graveolens*. The seed, aromatic, and carminative in a moderate degree, not unlike caraways, but weaker.

DILUENTS. Weak liquids employed as a common drink, such as barley-water, bran-water, &c. supposed to cool and dilute the blood in fevers, and inflammatory complaints.

DISOXYGENISEMENT. This is effected by exposing any substance containing oxygen, to the action of any body having a greater affinity for oxygen than this substance itself possesses.

DISTILLATION. An operation by which, through the agency of heat, the fixed and volatile principles contained in any body are separately obtained.

DIOSMA CRENATA.—*Folia*. Buchu Leaves. This plant is a native of the Cape of Good Hope. The leaves when dried resemble those of senna, and possess a very powerful and aromatic odour. Their properties are tonic, diuretic, and sudorific, but I am not aware that they have been employed by veterinary practitioners.

DIURETICS. Medicines that increase the secretion of urine; an effect more readily produced in the horse than in the human body. There is a great variety of medicines that act as diuretics: the principal are, the various kinds of turpentine, balsam, soap, the fixed alkalies, nitre, &c.

Diuretics are much used in veterinary practice, particularly in diffused swellings of the legs or other

parts, and grease: when given in moderate doses, they may be continued for several days; and a horse may work without danger during their operation. The diuretic alterative in our Pharmacopœia is an excellent medicine for horses that are subject to swelling of the legs, and in slight cases of grease; but in more violent complaints we must employ more active remedies, these being adapted only to mild cases which do not prevent a horse from working. However paradoxical it may appear, there is truth in the assertion that diuretics are among the most useful, and likewise the most mischievous medicines, that are given to horses. They are extremely useful in carrying off the impurities and superfluous serum from the blood, thereby producing the best effects in many diseases; but, unfortunately, while diuretics are given weekly, and almost daily for this purpose, no attention is paid to the source from which those impurities are derived, that is, a morbid digestion and chylification, originating from, kept up, and gradually augmented, by general bad management, unwholesome food, or an improper quantity even of good hay. (See Introduction and Cordials.)

Horses that have good appetites will take a diuretic in the form of powder with their food, and this form should then be preferred.

DIURETIC POWDER.

Powdered resin and nitre, of each 4 dr.

Mix for one dose, and let it be repeated daily, or

twice a day, if necessary, until a sufficient effect is produced.

DIURETIC BALL.

Hard soap and common turpentine,
of each .... 4 dr.
Powdered caraway seeds enough to form the ball.
Mix for one dose.

CORDIAL DIURETIC BALL.

Hard soap and common turpentine,
of each .... 4 dr.
Ginger .... 1 dr.
Opium .... ½ dr.
Powdered caraways enough to form the ball.

Diuretics should not be kept to become hard, as they often are, but be given in rather a soft state, and recently made. They should also never be so given as to operate while a horse is in work, as he may thereby be prevented from staling when he has occasion: from neglecting this precaution, and from their frequent and immoderate use, arise those mischievous effects before alluded to. The kidneys are often materially injured by them as well as the bladder. (See vol. vii. and my Veterinary Dictionary.)

DOLICHOS PRURIENS. See Cowage.

DRAGON'S BLOOD.—*Sanguis Draconis.* A resinous substance of a dark red colour, which, when pure, is entirely soluble in spirits of wine. Dragon's blood was formerly employed as an astringent and

styptic, in fluxes and internal bleedings; but modern practitioners scarcely ever use it. It is still employed by farriers, in the complaint of horned cattle, which they term *red-water*, or bloody urine, but without effect; nor is there any disease of the horse in which it is likely to be useful.

DRASTIC. A term applied to those medicines that, by the violence of their action, produce liquid purges. Their use is particularly indicated in dropsy, in which disease, by determining a large quantity of the fluids of the body to the intestinal canal, and subsequently causing it to be voided, the symptoms of this complaint are greatly mitigated. Diuretics are chiefly used in dropsy, but when the kidneys, either from disease or want of tone, do not act with sufficient vigour, drastic cathartics are of the greatest utility.

DRAUGHTS. See Drench.

DRENCH. A medicine in a liquid form. This is an inconvenient method of giving medicine to horses, some part of the dose being generally wasted. It is preferable, however, on many occasions, to every other form, on account of the medicine acting in much less time than in a solid form: in flatulent colic, or gripes, for example, where the symptoms are extremely urgent and alarming, a proper drench will soon relieve the animal, while a ball, unless soft and very soluble, would not produce any effect. Farriers commonly compose their drenches with ale, whatever the qualities of the other medicine may be, which is often improper, since the properties of the

liquid should always correspond with the virtues of the other ingredients. *Cordial drenches*, therefore, may with propriety be made with ale, but those of a contrary tendency should be mixed with gruel or water.

The best instrument for giving drenches is the horn of an ox; the opening being cut obliqely in the form of a spout. Bottles are sometimes used on an emergency to give drenches; but they are attended with danger and should be handled cautiously. In giving a drench, the horse's tongue should be held with the left hand; and when the head is sufficiently elevated, the medicine is to be carefully poured into the throat, immediately letting go the tongue, while the head is kept up until the drench is swallowed. Drenches are very seldom given with dexterity, and great part of the medicine is sometimes wasted. Every groom should learn to give them with facility, and always keep a proper instrument in the stable. In giving a drench, the head should not be kept so high as it generally is, nor should the throat be pressed or rubbed, as it often is, with a view to make the horse swallow, as it is apt to excite coughing. In severe colds or strangles, there is often some degree of soreness or inflammation of the throat, by which swallowing is rendered difficult and painful. In such cases no attempt should be made to give either a drench or a ball, as the complaint would be increased by it; and if at any time a horse happens to cough or appear distressed while taking a drench, his head should be

immediately let down. Hot stimulating medicines, or such as are very nauseous, are better given in the form of balls than drenches. Drenches should always be given with as much gentleness as possible; the horn may generally be introduced with ease, merely by pressing down the tongue with the fingers of the left hand, instead of dragging it out, as is commonly done. A small quantity only of the liquid should be given at once; about six or eight ounces, or even less, when tincture of opium or any powerful medicine is given; and it is of importance to be accurate in the dose, and not give either more or less than a certain quantity.

In locked-jaw it is very difficult to give a drench, unless a small horn be kept for the purpose, and even then a good deal of dexterity and perseverance are often required to effect it. In some cases the jaws are so completely closed, and the muscles of deglutition so affected, that a drench cannot be given; and then the only method of conveying liquid medicine into the body is in the form of clyster. (See Clyster.)

DRENCH FOR STOMACH STAGGERS.

No 1.	Barbadoes aloes	5 dr. to 1 oz.
	Calomel	2 dr.
	Oil of peppermint	20 drops.
	Warm water	1 pint.
	Tincture of cardamoms	2 oz.

Mix for one dose.

No. 2.	Common salt	4 oz.
	Ginger	2 dr. or tea-spoonfulls.
	Magnesia	1 oz.
	Warm water	1 quart.

Mix for one dose.

DRENCH FOR A COUGH.

Bruise 3 oz. of fresh squills in a mortar, or 4 or 5 oz. of garlic, and macerate them in 12 oz. of vinegar in a slow oven, or on a hot plate, for one hour; strain off the liquid part, and add to it 1 lb. of treacle, or honey. The dose in bad coughs is 3 or 4 oz. If there exist much irritation, a table spoonful of tincture of opium may be added to every 6 oz.

Markham's drench for Anasarca, or general dropsy, consists of a decoction of wormwood in ale, boiled down to two quarts, and skimmed. In this, 1 oz. of Castile soap is to be dissolved; and into this mixture 6 drams of powdered Grains of Paradise (greater cardamom seeds), and a similar quantity of long pepper, are to be stirred. The whole of this drench is to be given fasting, and the horse to be clothed, and exercised until he sweats and stales profusely. This is a most powerful medicine.

CORDIAL DRENCH.

Good beer or ale	½ pint to a pint.
Ginger, powdered	1 dr.
Allspice, ditto.	2 dr.
Caraways, ditto.	3 dr

Let the ginger, allspice, and caraways simmer for

ten minutes in a small quantity of the ale, and then add the rest. When it is requisite to render this drench astringent, two drams of catechu may be added.

PURGATIVE DRENCH FOR CATTLE.

No. 1.	Epsom salts, or common salts	4 to 6 oz.
	Warm gruel	1 quart.
	Ginger	1 dr.
	Magnesia, or carbonate of soda	1 oz.—Mix.
No. 2.	Castor oil	1 pint.

ANODYNE DRENCH. See Anodynes.

DIURETIC DRENCH.

Nitrate of potass	½ oz.
Warm gruel	1 pint.—Mix.

To be repeated every four hours until it begin to operate. (See vol. i. and iii.; and the Author's Veterinary Dictionary.)

DRESSING. An operation of some importance in the management of horses; and consists in currying, brushing, and wisping them, when kept in the stable. This is done, not merely with a view of removing the dust that may be collected on the coat, but to keep up a healthy degree of action in the perspiratory vessels, or pores of the skin. When this is neglected or improperly done, the perspirable matter hardens or thickens, and remains about the roots of the hair, and has the appearance of a whitish dust or small scales, which often cause an itching, and make the skin feel dry, and the coat appear

coarse or wiry, instead of being soft and shining, as it is in a horse that is properly dressed or groomed. Horses that are not properly exercised have the more occasion for good dressing; and the operation is more easily and more effectually performed when a horse has been previously exercised until he perspire moderately. Notwithstanding the improvement which regular and careful dressing makes in a horse's appearance, it is not improbable that the skin may be thereby brought to a degree of delicacy or sensibility which is not consistent with the employment for which the animal is wanted, and may render him very liable to diseases. Yet, on the other hand, it is to be considered that the artificial manner in which horses are generally kept and fed, may render the skin, or perspiratory organ, a much more essential emunctory than it would be were they kept and fed in a manner more conformable to nature.

In India, our cavalry soldiers, instead of using a brush, dress their horses with a coarse glove, made of the same material as a horse's nose-bag. This, I should think, although not so good as a brush, may be advantageously employed for rubbing the legs. The term *dressing* is likewise used to denote any application made to a wound or sore.

DULCAMARA. See Bitter-sweet.

EARTH. Horses at camp or grass are sometimes disposed to eat considerable quantities of earth: this should always be prevented, if possible, as it sometimes accumulates in the intestines and destroys

the animal. It is not only necessary to prevent them from eating earth, but likewise to correct the propensity to it, which depends upon a morbid state of the stomach. (See Absorbents; also vols. i. and iii.)

EARTHS. The principal earths that are made use of in medicines are barytes, lime, magnesia, and alumine.

EGGS.—*Ova*. These have been recommended for the improvement of a horse's wind; but they certainly do not possess any quality of that kind. They are also used for the purpose of mixing oils and balsams with water.

EGYPTIACUM. — *Linimentum Æruginis*. Liniment of Verdigris. A preparation made by boiling together five ounces of powdered verdigris, one pound of honey, and seven ounces of vinegar, until they are incorporated. This is a good remedy for thrushes or diseased frogs.

ELACAMPANE; the Root.—*Enulæ Campanæ Radix*. The root of this plant is a weak aromatic stimulant, and was formerly recommended in coughs, to promote expectoration: farriers use it for the same purpose; but, as we have many medicines of this kind of greater efficacy, it hardly deserves notice. Dr. Cullen has remarked, that its diuretic powers are very inconsiderable, and that he has been unable to discover its expectorant qualities.

ELATERIUM. Wild Cucumber. This plant is a native of the south of Europe, and flowers in June and July. Elaterium is of a yellowish, and

slightly greenish, colour. It is inodorous, has a slightly bitter taste, and, in the human frame, acts as a most violent purgative, being of that class termed hydragogue or drastic. I gave a healthy horse, that I purchased for the purpose of making experiments, half a dram, or thirty grains, at one dose, which did not produce the slightest effect: it did not even diminish the appetite, or move the bowels or kidneys. After an interval of twenty-four hours I gave the same horse one dram and a half, or ninety grains, which proved equally inert. Bourgelat says, that it produces no purgative effect on the horse. Vitat gave it to the extent of half an ounce at a dose without effect.

ELDER.—*Sambucus.* This tree is commonly found in England growing in hedge-rows. Some preparations of elder have cathartic qualities, but are not deserving of attention by the Veterinarian. The chief use of elder is to form an oil, of a greenish hue, and of little or no use, and an ointment, which serves the same purpose as hog's lard in the composition of unguents. The oil is prepared from the leaves, the ointment from the blossom of the tree. There is also a distilled water made from it, which is often employed in the composition of eye-waters, but does not appear to possess any medical qualities that do not exist in simple or distilled water.

ELECTRICITY. The operation of electricity is performed on the human being in those disorders which require stimulant applications, as in paralysis. It likewise rouses the action of the absorbent system

in a very remarkable degree, and on that account is sometimes employed in cases of indolent tumours. I am not aware that this remedy has been adopted by veterinary practitioners, but can see no objection to its employment.

ELECTUARY.—*Electuarium.* An electuary is a compound of medicines made of the consistence of thick honey, by the addition of some conserve, syrup or mucilage. There are several formulæ for electuaries to be found in our Pharmacopœia, as electuary of cassia, of opium, aromatic electuary, &c.; but these medicines are scarcely ever administered to the horse in this form; almost the only one used in veterinary medicine, and that very rarely, being the electuary of senna, or lenitive electuary, and this is much too weak to be used where purgatives are required.

ELEMI.—*Elemi.* This is a gum obtained from the Elemi tree, a native of the Brazils and Carolina. Its properties are stimulant; but it is scarcely ever prescribed internally, being chiefly used in the composition of some digestive ointments.

ELIXIR, PAREGORIC, or AMMONIATED TINCTURE OF OPIUM.—*Elixir Paregoricum, sive Tinctura Opii Ammoniata.* A preparation of camphor, opium, and oil of anise-seed, but not adapted to veterinary practice.

ELM BARK.—*Ulmi Cortex.* The properties of this bark are tonic and diuretic; and the decoction of elm bark has been found very beneficial in several cutaneous eruptions to which the human frame is

subject. However, its medicinal qualities are not of sufficient power to make it of any value to the veterinarian.

EMBROCATIONS. External applications in a liquid form that are rubbed on a diseased part, as in strains and indolent swellings, and as an auxiliary in the treatment of internal inflammation. They are of a stimulating nature, and are greatly assisted by friction. Of this kind are opodeldoc, soap liniment, &c.

MUSTARD EMBROCATION.

For inflammation of the lungs.

Flour of mustard .... 4 oz.
Liquid ammonia .... 1½ oz.
Oil of turpentine .... 1 oz.

Water, a sufficient quantity to bring it to the consistence of cream. Flour of mustard mixed into a thin paste with water only is a powerful stimulant, and may be employed with good effect in cases of internal inflammation either of the bowels or lungs.

Embrocations for hard indolent tumours.

No. 1. Olive oil .... 4 oz.
Camphor.................. 4 dr.—Mix.

No. 2. Mercurial ointment .... 2 oz.
Olive oil and camphor, of each 2 dr.

Embrocations of a more stimulating kind are sometimes employed in swellings of the joints, old strains, or other local affections, such as soap liniment with liquid ammonia, olive oil, oil of turpen-

tine, and liquid ammonia; but blisters in such cases are generally more effectual.

Embrocations are often improperly employed, as in recent strains, or inflamed tumours, and other cases where emollient or cooling applications are required. Both strains and bruises are, at first, attended with a degree of inflammation, proportionate to the violence of the injury, and the susceptibility of the injured part; therefore they require, at first, such treatment as is calculated to subdue inflammation, that is, bleeding and purging with a suitable diet, and, in strains, *rest*. The local or topical remedies in the inflammatory stage, are poultices, but in these cases bleeding and purging, immediately after their occurrence, are an essential part of the treatment. (See vols. i. and iii.)

EMETICS. Medicines that excite vomiting. It is very generally believed that horses are incapable of vomiting: I have met with one instance, however, where it occurred spontaneously, and was soon after succeeded by purging.

Medicines that are considered as the most violent emetics in the human system are generally inert in the horse. A remarkable example of this may be noticed in white vitriol (*sulphate of zinc*), of which a horse has taken twelve ounces at a dose, without much effect being produced. This experiment has not, I believe, been repeated, and it is desirable that it never should be; nor should any experiments of a similar kind be made, as no advantage can possibly result from them, while much pain may be endured

by the unfortunate animal who is subjected to them, unperceived by the practitioner or his assistants. It was asserted, at one time, that vomiting may be produced by inserting hellebore under the skin; this experiment was said to have been made at the Veterinary College of Copenhagen, but it does not appear to have succeeded with other practitioners. (See Hellebore.)

In a work on hydrophobia, by Dr. R. Pearson, of Cold-field, near Birmingham, in which he suggests the propriety of injecting medicinal substances into a vein, when exhibition by the mouth or fundament is impracticable, it is asserted that "this is frequently practised upon diseased horses at the Veterinary College of Copenhagen." This, probably, is the new method of treating locked-jaw, hinted at by Mr. Sewel (see Preface to vol. i. 12th and 13th editions), and is worth a trial, when medicine cannot be given by the mouth, and opiate clysters have proved ineffectual; and if, as they state, hellebore, when applied under the skin, is absorbed, and causes sickness, why may not a solution of opium be also absorbed when applied in a similar manner? It is surely worth a trial in locked-jaw. It must be remembered that, when a solution of any medicine, or any liquid whatever (except when blood is transfused from the veins of one animal into those of another), is thrown into the veins, it is first necessary to take away a quantity of blood equal to the medicine to be injected, otherwise, too great a pressure of the brain will be the consequence; because the

brain, receiving a large supply of blood, is of course distended: and as it is contained in an unyielding, bony case, pressure must be the result; and this, carried to any great extent, will produce every symptom of apoplexy. Ipecacuanha and emetic tartar have no emetic power in the horse; and though hellebore appears to excite a painful sensation in the stomach, it has not, even in the dose of one ounce, caused vomiting. (See vol. i. Structure and Functions of the Internal Organs.)

EMETIC TARTAR.—*Antimonium Tartarizatum.* A preparation of antimony (see Antimony) and cream of tartar (see Acid, Tartareous). This is a violent emetic in the human subject, even in the quantity of one or two grains: but in more minute doses is used as a febrifuge.

In the horse it is a very safe medicine, and useful in fevers: it is generally given in doses of one or two drams, which may be repeated every day, or even twice a day, should the case require it. Emetic tartar seems to be the best of the antimonial preparations, though others are occasionally preferred: but there is some difficulty in deciding this point; for all the preparations of antimony have so little activity in the system of the horse, that their effects are not often perceptible: we know them to be useful, however, from their frequently subduing or mitigating the disease for which they are employed. When antimonials are given to remove surfeit, or relax the skin, they may be materially assisted by exercise and moderately warm clothing. I have

lately successfully employed as an alterative the common sulphuret of antimony, finely levigated, or brought to an impalpable powder, by washing as chalk is. M. Volpi, an eminent Italian veterinary author, and one of the Professors of the Veterinary School at Milan, frequently prescribes emetic tartar in doses of four or five drams for horses, and much larger doses for cattle. To a sheep he gives thirty-six grains, to a pig a scruple, to a large dog six grains, and observes, that "when the nature of the disorder is well known, and the attack is severe and dangerous, we may begin with much larger doses, even four times the quantity above prescribed."

Fevers in the horse are always occasioned by internal inflammation, and the vital organs are always more or less affected. Whichever of them it may be, the essential remedy is the same, and that is bleeding until the animal faints. No apprehension of danger need be felt in bleeding to this extent: if the animal faints, it is rather favourable than otherwise, because we are then assured that sufficient blood has been taken for that time. But when the faintness goes off, which it will soon do, if the symptoms be not considerably mitigated, he must be bled again, and even a third and fourth time, should it be found necessary. Without this copious bleeding in fever, medicine will avail nothing. Next to bleeding, placing the animal in a cool situation, or even in the open air, is of the greatest importance; and, I may truly add, that the improvement made by Mr. Coleman in this respect, that is, in bleeding

copiously, and keeping the horse in the open air, has entitled him to the grateful remembrance of posterity.

EMOLLIENTS. Medicines or applications that soothe and allay irritation, by relaxing or softening the parts to which they are applied. They consist chiefly of oily and mucilaginous fluids, which are used either internally in inflammations of the gullet, windpipe, intestinal canal, or urinary bladder, or externally as fomentations or poultices (see Fomentation and Poultice), at a temperature that is most agreeable to the feelings of the patient, and best adapted to the purpose for which they are employed, that is, to assuage pain, subdue inflammation, and in tumours tending to suppuration, to hasten or promote that process. When employed to subdue inflammation they are materially assisted by bleeding and purging, or by moderate doses of nitre and antimonial powder, or tartarized antimony (*emetic tartar*). Emollient fomentations are generally made with marsh-mallows and other mucilaginous plants or herbs ; and poultices are composed of bran with oatmeal, linseed powder, lard, or oil, and some of the bulbous roots, such as the white lily, or turnip, with linseed meal or bread and milk. Internal emollients consist also of oily and mucilaginous fluids, or decoctions of marsh-mallow root, liquorice root, linseed, solution of gum, emulsions, &c. The effect of these also is considerably promoted by bleeding and opening medicines, as well as by nitre and antimonials, with a suitable diet.

Their action is the same as *demulcents.* (See Demulcents.)

EMULSIONS. A term given to preparations in which oil is blended with water, by means either of mucilage, the yolk of an egg, or a small quantity of some alkali. (See Alkali.) Emulsions have a milky appearance, and are a convenient vehicle for pectoral medicines, being supposed to possess the power of allaying irritation of the lungs.

These mixtures of oil and water, by the intervention of an alkali or mucilage, are sometimes given alone in coughs.

SIMPLE EMULSION.

Salad oil	2 oz.
Clarified honey	3 oz.
Soft water	1 pint.
Sub-carbonate of potash	2 dr.—Mix.

PECTORAL EMULSION.

Camphor	1 to 2 dr.

To be rubbed into a powder by means of a few drops of spirit of wine.

Oil of anise-seed	12 or 15 drops.

To this add, gradually, from twelve ounces to a pint of the simple emulsion. To this may be added occasionally nitrate of potash and tincture of opium, as in irritability of the bladder. An elegant and pleasant emulsion is made by rubbing blanched almonds (that is, almonds that have had the skin taken off by steeping them in hot water) in a mortar

with sugar and mucilage of gum arabic. When these have been well rubbed, water is to be gradually added.

ENEMA. A clyster. See Clysters.

ENULÆ CAMPANÆ RADIX. See Elecampane.

EPISPASTICS. See Blisters.

EPSOM SALT. See Sulphate of Magnesia.

EPULOTICS. Medicines that induce cicatrization.

ERRHINES. Powders that cause sneezing by being blown up the nostrils. They are composed generally of hellebore, snuff, asarabacca, turpeth mineral, &c.

ERYNGO; the Root.—*Eryngii Radix.* A weak aromatic stimulant, of no use in veterinary medicine.

ESCHAROTICS. Mild caustics, generally in the form of powder. Such are nitric oxide of mercury (*red precipitate*), exsiccated sulphate of alumine (*burnt alum*), acetate of copper (*crystallized verdigris*), sulphate of copper (*blue vitriol*). These are applied, either separately, or two or more of them are mixed together, and finely powdered; sometimes they are mixed with bole armenic or chalk, or with lard or digestive ointment, by which they are rendered milder.

ESCHAROTIC POWDERS.

No. 1. Exsiccated or burnt alum .... 2 dr.
Nitric oxide of mercury ...... ½ oz.—Mix.

No. 2. Sulphate of copper .... 1 oz.
Bole armenic .... 1 oz.—Mix.

No. 3. Acetate of copper .... 1 oz.
Burnt alum .... 2 dr.—Mix.

(See Caustics, Astringents, Digestives, and Detergents.)

ESCHAROTIC LINIMENT.

Honey .... 8 oz.
Muriatic acid .... 1 oz.
Verdigris .... 1 oz.

Mix over a slow fire.

This liniment may be made stronger by substituting nitrous acid for muriatic, or by retaining the muriatic, and substituting for the verdigris one dram of sublimate. A weaker liniment is made, and a very useful one, by using two ounces of vinegar instead of the muriatic acid. (See Egyptiacum.) Escharotics are applied to foul ulcers, and are employed to destroy fungous or proud flesh.

ESSENCE. This term is applied to essential oils, and very properly, since they generally contain all the medical virtues of the substance from which they are extracted.

ESSENCE OF PEPPERMINT. The preparation sold in the shop by this name is made by dissolving a small proportion of oil of peppermint, 1 oz. for instance, in 3 oz. of rectified spirit or alcohol, that has been previously tinged with some green colour.

Essence of Mustard appears to be composed of mustard, camphor, oil of rosemary, and oil of turpentine, which form a good stimulating embrocation. (See Embrocation.)

ESSENTIAL OILS. The smell, taste, and other qualities of vegetables, frequently reside in a volatile oil, particularly in those vegetables, or certain parts of vegetables, that have a strong odour and taste; as mint, pennyroyal, peppermint, lavender, caraway-seeds, anise-seeds, juniper-berries, lemon-peel, sandal-wood, &c. This oil, being volatile, may be extracted, and procured in a separate state, by distillation; and as it often contains the useful qualities of the substance it was obtained from, is termed an *essential oil.* (See Essence.)

ETHER, SULPHURIC.—*Æther Sulphuricus.* This is the most volatile liquid we are acquainted with, and evaporates readily in the common temperature of the atmosphere; it must be given, therefore, with great expedition, or a considerable part of the dose will be lost by evaporation. Sulphuric ether is a powerful stimulant, and must be given with caution. I have known a dose of 2 ounces destroy a horse, but it was given in a case that was supposed to be the flatulent or spasmodic colic, but which was probably inflammation of the bowels.

ETHIOP'S MINERAL.—*Hydrargyri Sulphuretum Nigrum.* Black Sulphuret of Mercury. A preparation made by rubbing equal parts of quicksilver and flower of sulphur together, until the

mixture becomes black, and the quicksilver invisible.

Ethiop's Mineral, though generally considered as a medicine of little power, or nearly inert, is, I am inclined to believe, possessed of considerable virtue, and will be found, probably, as good a mercurial as can be employed, in all cases where it is necessary to introduce mercury into the circulation, as in farcy, glanders, obstinate cases of mange, &c. It should be given in a dose of 2 or 3 drams in the horse's corn, once or twice a day, until an offensive smell is perceived in the animal's breath, or he is found to stale more than usual; for these symptoms indicate that the mercury has got into the circulation. The disorder for which it is given may, at this period, be expected to yield to the mercurial influence, and may not require a further continuance of the medicine. I would advise a trial being made of Ethiop's mineral in the early stage of glanders. M. Volpi, one of the Professors of the Veterinary School at Milan, has published an account of sixteen horses that he cured of the glanders, by means of Ethiop's mineral, given internally, and by syringing the nasal cavities with lime water. One of them, a cast horse from the First Regiment of Chasseurs, had been glandered eight months, and when M. Volpi had cured him, he sold him to an officer of the same regiment, to whom the horse had formerly belonged, and who knew that he had been glandered. He gave half an ounce every day until the appetite was affected, and there was a slight salivation. Lime

water was then given for a short time until the salivation ceased, and the appetite returned. The Ethiop's mineral was then given as before, and continued in this manner until the disease was cured. The time in which the cures were accomplished was from two to five months.

Ethiop's Mineral, mixed with an equal quantity of sulphuret of antimony, forms the Antimonial Ethiop's, and is a good remedy for cutaneous complaints. The dose two drams in the horse's corn. This is the preparation which M. Malouin employed for glanders. He gave from half an ounce to an ounce every morning, and a handful of periwinkle, chopped up in the horse's mash, every night. He also administered a purgative once in eight days. M. Malouin's method of making the antimonial Ethiop's was different from the simple process above mentioned. He mixed common antimony with quicksilver, either by trituration or by fusion. Bourgelat, however, in his Matière Medicale, says, "The character given of this preparation in the public papers, as a remedy for glanders, induced us to give it a trial; it was administered to several glandered horses, with periwinkle as directed by M. Malouin, but it never effected a cure, and I may add, that in mangy complaints it appeared to be inferior to antimony given alone."

EUCALYPTUS RESINIFERA. See Kino.

EUPHORBIÆ GUMMI-RESINA. Euphorbium. A gum resin, that exudes spontaneously from a large oriental tree. It is brought to us in

small drops of a pale yellow colour, which are generally mixed with woody and other extraneous matter.

Euphorbium is used in veterinary practice as an external application. It is generally employed in the form of tincture; sometimes it is mixed into an ointment with hog's-lard, mercurial ointment, oil of origanum, oil of bay, &c. being previously reduced to a fine powder. It is also frequently an ingredient in strong blisters, to which it proves a powerful auxiliary. In whatever form euphorbium is employed, it proves extremely acrimonious and stimulating, and is therefore employed to reduce callous swellings of the back sinews, or other parts; curbs, windgalls, &c.

The tincture is made by digesting, or steeping, one ounce of the powder in four or six ounces of rectified or proof spirit; frequently shaking the bottle which contains the mixture, and keeping it in a warm place: after eight or ten days it is to be strained off, and kept well corked. Some add to this a little sublimate and oil of origanum, or camphor. There is another kind of tincture, made by digesting the powder in a strong solution of potash, which also acts very violently. In powdering euphorbium, the mortar should be placed where there is a current of air, so that the dust which arises may be blown off, otherwise it would get into the nostrils or throat, and prove excessively troublesome, sometimes causing bleeding at the nose and swelling of the integuments of the head. I do not consider euphorbium an eligible ingredient in blisters, as

there is some danger of its causing ulceration of the skin.

EXERCISE. We have observed, under the article Diet, that the horse's exercise should be always proportionate to the quantity and quality of his food; or rather, that the latter should be adapted to the former, in order to preserve him in health. We have further to remark, that in other points of view exercise is of great importance. In training a horse for the turf or the chase, it is by *exercise* properly conducted, and a well regulated diet, that we enable him to perform those wonderful exertions that are required from him, and bring his wind to the highest degree of perfection which it is capable of attaining. In training a horse, whether he be designed for the turf, the chase, or the army, this precaution must always be observed,—that his exercise never exceeds his strength. Many horses have been destroyed by neglecting this precaution, particularly in the army, where we too often see horses recruited of three years old. When first brought to the regiment (perhaps from a considerable distance), they are weak and out of condition, often suffering from strangles, which, from their weak state, do not come forward properly, but affect chiefly the internal part, causing pain and difficulty in swallowing. At this time they are unfit for any kind of work, and require two months to be brought into proper condition for the riding school. However, they are not, in general, allowed half that time, but are brought too hastily into the school, where,

being unaccustomed to that, or, indeed, to any kind of work, they become excessively fatigued; and to young horses in a state of debility, particularly if they are not immediately attended to, and taken great care of when brought sweating from the school, this exercise, I am convinced, is often attended with destructive consequences. Exercise, therefore, should always be moderate at first, and adapted to the animal's strength; by increasing it gradually, and in proportion to his condition, he may soon be brought to bear, without inconvenience, that degree of exertion, and velocity of motion, for which he is wanted. Exercise not only prevents disease, but materially assists in the cure of many: thus, in swellings of the heels and legs, grease, inflamed eyes, &c. medicine, without proper exercise, seldom effects a cure. (See vol. i. where this subject is more fully considered.) Though many of the horse's diseases arise from want of exercise, a still greater number are produced by the immoderate and excessive exertions in which he is so frequently and so cruelly employed, especially in this country. The horses of mail and stage coaches, post chaises, &c. afford numerous examples of this. But before they are brought to this severe and generally destructive labour, they are often in a crippled and debilitated condition, by being worked at too early an age, by violent trotting upon hard roads, or hunting, or by general ill-treatment. We often find the horses that have been thus sold as coach or post horses are those of superior shape and action, of high spirit,

and have, perhaps, distinguished themselves as hunters, or in matches against time, or in trotting matches; and being considered unsafe to ride, from their crippled state, are consigned to coach work, where they are kept upon their legs by the severity of the bit, and the frequent application of the whip. Horses do not arrive at maturity until they are six or, according to Mr. Clark, seven years old; but they are generally put to work at three or four; and scarcely any are allowed to complete their fifth year, before they are employed in the hardest labour, except among experienced sportsmen, who do not consider a horse fit for their use until he is six years old; but, during the fifth year, employ them in moderate work upon the road, or in riding to cover. The proportion of lame horses in this country, compared to those of France, is perhaps as ten to one. This the French veterinarians seem to attribute to their superior mode of shoeing; but, in my opinion, shoeing has nothing to do with it. The peculiar frequency of incurable lameness, or founder in this country, is entirely owing to immoderate work, and hard roads.

EXPECTORANTS. Medicines that increase the discharge of mucus from the lungs, and thereby relieve cough and difficulty of breathing. There are many medicines which produce this effect in the human body; but in the horse the action of *expectorants* is not so perceptible. Some of the medicines, however, termed expectorants, prove serviceable in the horse, by relieving or curing cough and

difficulty in breathing, or what is termed thickness of wind, among these are squill, and gum ammoniacum; both which I have often found beneficial in those complaints. But the medicines I have found most useful in chronic cough and asthma, or broken wind, are mild diuretics joined with cordials. No medicine, however, will do good in those complaints, unless the horse's diet be carefully regulated. (See Cordials, remarks on.) I have known the occasional use of cordial diuretics, when the horse's diet is carefully attended to, not only relieve but apparently cure broken wind; but the horse's work should be moderate, and so conducted as not to interfere with digestion. If taken on a journey, he should be only walked for the first two miles. His corn should be made wet, and his hay (which must be of the best quality, and not exceed eight pounds in twenty four hours, divided into three portions at least, should be dipped in water. When costive he should be relieved by clysters and bran mashes. This subject has been noticed, at some length, in the first volume, particularly in the last edition. (See Chronic Cough and Broken Wind; and vol. iii. 8th edition.)

EXPECTORANT BALLS.

No. 1.	Gum ammoniacum	2 to 4 dr.
	Powdered squill	1 to 2 dr.
	Castile soap	3 dr.
	Oil of anise-seed, ...	30 drops.
	Ginger	1 dr.

Syrup enough to form the ball.

No. 2.	Gum ammoniacum	2 oz.
	Powdered squills	1 oz.
	Powdered ipecacuanha	½ oz.
	Powdered opium	½ oz.
	Powdered ginger	1 oz.
	Powdered allspice	1 oz.
	Oil of anise-seeds	½ oz.
	Balsam of sulphur	4 oz.
	Castile soap softened by being beaten up with a little syrup ..	2 oz.

To be beaten into a mass fit for making balls. The dose from 1 ounce to 1 ounce and a half daily, or twice a day.

	Barbadoes aloes	1 dr.
	Assafœtida	1 dr.

Liquorice powder and syrup enough to form the ball. One to be given daily until the bowels are a little opened, or the cough is cured.

No. 4.	Gum ammoniacum	2 dr.
	Powdered squills	1 dr.
	Ipecacuanha	½ dr.
	Castile soap	2 dr.

Syrup and liquorice powder enough to form the ball. One to be given daily or twice a day.

Doctor Paris in his Pharmacologia remarks, that more is to be gained by the combination of these remedies than can be obtained by any of them separately.

DRENCH.

Garlic bruised	4 oz.
Boiling vinegar	12 oz.

Macerate near the fire three or four hours, then press out the fluid part, and mix with it six ounces of honey. This is sufficient for two doses, and may be given morning and evening. It cannot, perhaps, be too often repeated; but unless the horse's diet is carefully attended to, medicine will avail but little, either in chronic cough or imperfect wind. (See vol. iii. 8th. edit.)

EXTRACTS.—*Extracta.* These are made by boiling the substance whose virtues are to be extracted in distilled water, pressing out the decoction, straining it, and setting it aside in order that the fœces may subside; after which it is again boiled in a water bath, saturated with sea salt, until it acquire a proper consistence. In this manner are made the extracts of aloes, gentian root, white poppy heads, liquorice, &c.

EXTRACTUM SATURNI. See Goulard's Extract.

EYE-WATER, or COLLYRIUM.

No. 1.	Super-acetate of lead (sugar of lead)	2 dr.
	Vinegar	2 to 4 oz.
	Soft water	14 oz.—Mix.
No. 2.	Sulphate of zinc	1½ dr.
	Diluted sulphuric acid	½ dr.
	Water	1½ pint.

No 3. Super-acetate of lead .... 2 dr.
Sulphate of zinc .... 5 scrup.
Water .... 1 pint.

Mix and strain through blotting paper.

In severe attacks of inflammation of the eyes they are often in so irritable a state as to admit only of the application of warm water, or milk and water; then either of the above eye-waters, at first diluted with an equal quantity of warm water, may be used; and when the inflammation has abated, they may be made rather stronger, and applied cold. Should the above formulæ be found ineffectual, let one, two, or three ounces of tincture of opium be added, or a larger proportion of vinegar to No. 1. than is directed. The vinous tincture of opium (*vinum opii*), undiluted, has often done good, applied by means of a small camel hair pencil brush, or squeezed into the inner corner of the eye, by means of a small bit of clean sponge. A solution of the extract of belladonna, in white wine, or diluted spirit, may also be tried. (See Collyrium, vol. i.; and my Veterinary Dictionary, article Eye.)

FARINA. See Wheat Flour.

FEBRIFUGE. A term given to medicines that moderate or lessen the violence of fever.

FEBRIFUGE OR FEVER BALLS.

No. 1. Emetic tartar .... $1\frac{1}{2}$ to 2 dr.
Nitre .... 1 oz.
Liquorice powder .... 3 dr.

Treacle enough to form the ball.

No. 2. Antimonial powder .... 2 dr.
Precipitated sulphuret of antimony ½ dr.
Nitre .... 1 oz.
Liquorice powder .... 3 dr.
Treacle enough to form the mass.

No. 3. Camphor .... 1 to 2 dr.
Nitre .... 6 dr. to 1 oz.
Antimonial powder .... 2 dr.

Flour and treacle or syrup enough to form the ball.

Either of the above balls are to be given morning and evening, and their operation assisted by good dressing, warm water, and mashes. It should never be forgotten, that copious bleeding, at the commencement of fever, is the essential remedy, and that no medicine, or mode of treatment, will avail without it. Opening medicine or clysters are generally required also.

FENNEL SEEDS.—*Fœniculi Semina.* The seeds of sweet fennel are in some degree stomachic and carminative, in doses from one to two ounces. The essential oil they afford possesses the same quality in a stronger degree.

The dose of the oil is from half a dram to one dram.

FENUGREEK.—*Fœnum Græcum.* The seeds only of this plant are employed for medicinal purposes: on account of their mucilaginous quality they are used in making poultices, and sometimes emollient glysters. Farriers often give them internally, with what view I cannot pretend to say;

since they do not appear to be adapted to the cure of any complaint. They are eaten in the Levant, and considered stomachic. The powdered fenugreek sold in the shops contains a large proportion (generally one half) of pea meal. It is supposed, especially by waggoners, and the servants of large horse proprietors, to promote condition.

FERN.—*Filix.* The root of male fern was formerly considered a remedy for worms, particularly the tape-worm: it seems now, however, to have got into disrepute. I have never heard of its being tried for horses, nor does it seem to deserve our attention.

FERRUM. See Iron.

FERULA ASSAFŒTIDA. See Assafœtida.

FETID ALOES. A species of aloes so called from its offensive smell. It is also known by the name of Caballine Aloes; which see.

FIBRINE. This forms the basis of muscular fibre, and exists also in the blood.

FILIX. See Fern.

FIRING. A severe operation, often performed on the horse, and on some occasions highly useful. It consists in the application of a red-hot iron to the skin, so as to burn without penetrating through it. The violent inflammation this occasions rouses the absorbent vessels into action, by which callous or even bony swellings are sometimes dispersed. The diseases in which it is most efficacious are spavins, ring-bones, and old callous swellings about the back sinews, in consequence of strains and windgalls.

Firing draws blood to the affected part, thickens and strengthens it, and makes the skin act as a permanent bandage. A blister is often applied to the part, immediately after firing, or on the following day, to render it more effectual. It is necessary to observe that the milder remedies should be tried before this severe operation is resorted to. Firing has been recommended for the purposes of strengthening the back sinews and hocks of colts, to *prevent* strains, and what is termed breaking-down. (See vol. i. 13th. edition, where there is a plate to show the method of throwing a horse down, and securing him for the operation, and another representing the instruments employed.)

It has been asserted, that when firing is employed for old callous swellings of the back sinews, the swelling should be previously reduced by blistering, and that firing will then prevent any return of the complaint; whereas if the firing be performed in the first place, it will tend to fix the swelling, and render it incurable. I do not believe there is any ground for this opinion. It is certain, however, that when a part is in a state of inflammation, which is indicated by its being hotter and more tender than other parts, firing will do harm. The inflammation should be first removed by the frequent application of some cooling lotion, such as diluted vinegar, in which a little sugar of lead has been dissolved.

The hot iron is the most effectual remedy for those ulcers of the skin which depend upon farcy or glanders. It is improperly employed to remove

that swelling of the roof of the mouth next the upper front teeth, which is named *lampas*. (See vol. i. Lampas.)

FIXED AIR. See Carbonic Acid Gas.

FIXED ALKALI. See Alkalies.

FLAG.—*Iris.* The juice of this plant, which grows plentifully near rivers, is a strong purgative in the human system, but has not been tried on the horse.

FLAX-SEED. See Linseed.

FLIES, SPANISH. See Cantharides.

FLOUR. See Wheat Flour.

FLOWER OF SULPHUR.—*Sulphur Lotum.* This is much used by farriers as an ingredient in alterative medicine. It is procured from the impure brimstone or sulphur which is found in the neighbourhood of volcanoes, by *sublimation*, and is therefore named in the London Dispensatory SUBLIMED SULPHUR.

Flower of Sulphur is not perfectly pure however; it still retains a small quantity of sulphuric acid and other impurities, which may be carried off by washing; it then forms the milk of sulphur, or precipitated sulphur, of the shops.

Flower of Sulphur is sufficiently pure for veterinary purposes, and is generally given in the dose of one ounce: it is commonly joined with nitre and antimony, or nitre and resin; and is then thought to improve the coat and general condition of the horse, or remove swellings of the heels, and surfeit. I have given sulphur in a variety of doses; but the

only effect I could perceive was that of a mild laxative, and that did not take place until four ounces were given at a dose. From the observations I made on this occasion, I do not conceive that *sulphur* is of much use as an internal remedy in the horse, nor that it possesses any diaphoretic power. As a topical application in mange, it is certainly very efficacious, particularly if mixed with other remedies. (See article Mange, vol. i.; also my Veterinary Dictionary.)

Sulphur is very serviceable to young dogs, when they have any appearance of plethora or cutaneous disease, generally acting as a mild laxative: it may be given to them in milk, from one tea-spoonful to two or three.

A few years ago, M. Collaine, Professor of the Royal Veterinary School of Milan, published an account of some successful experiments he made on glanders. The medicine he employed was sulphur, beginning with a dose of four ounces, and increasing it gradually until he gave two pounds daily, mixed into an electuary with honey; he also took away about two quarts of blood once in two or three days. A dose of six ounces caused purging; ten or twelve ounces griping pains and purging. Six ounces of *sulphur vivum* were then given, which produced a similar effect, and some of the horses became so exceedingly weak that they lay down, and were unable to rise for three or four days. When they recovered a little from these alarming symptoms, he found the discharge from the nostrils much

lessened, as well as the swelling under the jaws. In some, the disease entirely disappeared, but after a few days returned, and was not permanently cured till it had fluctuated in this way several times. After they had got over the effect of the sulphur, on giving it again he found that a dose even of twelve ounces produced no effect; he therefore increased it to eighteen ounces, and from that to twenty-four ounces; but it no longer caused either purging or griping. Having continued the use of the medicine in this large dose for some time, and finding the disease remain stationary in some of the horses, he discontinued it for eight or ten days, in order to restore the susceptibility of the animal to the action of sulphur. On recommencing the treatment, he joined to six ounces of sulphur an equal quantity of antimony, which produced a considerable effect for about fifteen days, when it became inactive; he then gave from twelve to fifteen ounces of sulphur, with six ounces of liver of antimony, and in less than fifteen days all the horses that had not a very severe local affection were perfectly free from the disease. Similar trials have been made in France since M. Collaine's Report appeared, but the result was very different. According to M. Dupuy, in his work on glanders (*Traité de l'Affection Tuberculeuse, vulgairement appellée* MORVE, *&c.*), lately published, sulphur has been fairly tried at the Veterinary School of Alfort, near Paris, and has not succeeded in any one instance: in large doses it causes very dis-

tressing symptoms, viz. colic, purging, and great debility; and some of the horses died under the treatment. It is probable that sulphur may sometimes have caused a temporary cessation of the discharge from the nostrils, and as M. Collaine has not published anything further on the subject, he is probably become less sanguine in his expectations from this mode of treatment. He observes in his Report, that *sulphur vivum* (*soufre brut*) produced a greater effect than flowers of sulphur; and I am inclined to believe that *sulphur vivum*, when finely powdered and sifted through a fine sieve, will do just as well, if not better, for mange ointment or liniment, than the flower of sulphur, which is more expensive. When flower of sulphur is given internally, for mange or other cutaneous diseases, it may be joined with levigated antimony, or tartarized antimony, as in the formula under the head Alteratives.

FLOWERS OF BENZOIN.—*Flores Benzöes*. These are procured from gum Benjamin, or Benzoin, by sublimation. They are of a beautiful white colour, very fragrant, and extremely light. In human medicine they are employed as a remedy for coughs and other pectoral complaints; but they are scarcely ever used in veterinary practice: a sufficient dose for a horse would be very expensive, and it is probable that gum Benzoin would answer every purpose that can be obtained from the flowers. (See Benzoin.)

FLOWERS, OR OXIDE, OF ZINC.—

Oxidum Zinci. These also are obtained by sublimation from the metal named zinc. The medicine is said to possess a considerable tonic power. It has not, however, been given to horses, nor is it probable that it would be found an useful medicine for them; since white vitriol (*sulphate of zinc*), a more active preparation of the same metal, has been given to the amount of eight ounces and more, without producing any sensible effect; but it is said that in small doses, from one or two drams to half an ounce, white vitriol has a tonic quality. This preparation, however, as well as the other mineral tonics, such as salt of steel (sulphate of iron), and especially arsenic and sulphate of copper (blue vitriol), should be employed with caution, and not inconsiderately; for in those cases where large doses have been given by way of experiment without appearing to produce any sensible effect, I think it probable that the stomach has been materially injured. The horse that took the white vitriol in so large a dose did not appear to suffer from it, except from irritation in the bladder; but two or three days after six ounces of blue vitriol were given, which acted as a caustic on the stomach, and produced an inflammation, attended with violent pain, which soon destroyed him. A short time since I examined the stomach of a glandered horse that had been taking blue vitriol and solution of arsenic, and found the stomach much injured, though it was not indicated by any particular symptoms during the animal's life. He appeared to be in good health

at the time he was shot; had fed well, and was in good spirits. (See Tonics.)

Should any one be inclined to try the flowers of zinc, he may safely begin, I think, with the dose of two drams, or half an ounce, and gradually increase it until some effect is observed. The diseases to which it is adapted are those arising from debility.

FŒNICULA SEMINA. See Fennel.

FOMENTATIONS.—*Fomenta.* This term is applied to various kinds of decoctions, or medicated liquids, which are employed externally to bathe or foment any inflamed or painful part, or to improve the condition of wounds when they are very irritable, and discharge unhealthy offensive matter, or when approaching to a state of gangrene or mortification. Fomentations are therefore divided into the following kinds, viz. *emollient* and *anodyne.*

EMOLLIENT FOMENTATION.

Boil marshmallows in water for some time, then strain off the liquor, and bathe the affected parts with it while warm. (See Emollients.)

ANODYNE FOMENTATION.

No. 1. White poppy heads broken, two dozen.
Hemlock, two handfulls.

Boil for two hours gently in six quarts of water.

No. 2. Wormwood dried, and camomile
flowers, of each .... 4 oz.
Rue .... 3 oz.

Bay leaves .... 2 oz.

Boil them for one hour in a gallon of water.

Remark.—The efficacy of a fomentation depends on its being properly applied: I have therefore to observe, that the liquid should be only as hot as the part can bear without pain. Large flannel cloths are to be dipped into the fomentation, then lightly wrung out, and spread over the affected part; by the time one cloth gets a little cool, another should be got ready, and applied in the same manner: this operation ought to be continued for half an hour at least, and repeated three or four times a day. The emollient fomentation is adapted to inflamed swellings, from whatever cause they may arise; and when it cannot be procured, warm water alone will be found an useful substitute. The anodyne fomentation, No. 1, is of great service in wounds or swellings which are accompanied with great pain and irritability: it tends to correct putridity and gangrene, in larger wounds of the lacerated kind, where the matter is thin, ill-coloured, and offensive; but in such cases the assistance of internal remedies cannot be dispensed with. (See vol. i.)

It is probable that warm water is as good an emollient fomentation as can be employed, if used assiduously, and at a proper temperature, which should be regulated by the state or irritability of the part to which it is applied. In inflammation of the eye, for example, it should not be above 98°, or

blood heat; in inflamed and painful swellings it should seldom exceed 100°. In strains of the back sinews, vinegar, either alone or diluted, is considered a good fomentation; and as the injury is rather deeply seated, and not in the skin, the fomentation may be applied rather hotter than where the cuticle is affected.

When a fomentation is employed for inflammation of the bowels, it should be still hotter; indeed so hot as that the hand cannot be dipped into it without pain. The best mode of applying it is by means of a long piece of woollen-cloth, with the two ends joined, that it may be wrung out of the hot fomentation, by placing a stick through each end; for the liquor makes the cloth too hot to be handled and wrung out without this contrivance. When thus applied, it may be considered as a steam fomentation, and will be found very beneficial. Two men, one on each side the horse, are required to apply this fomentation effectually. In some cases, where the swelling or injury is not extensive, the fomentation may be applied with a large sponge, in others by a thick woollen-cloth, such as an old rug or blanket.

FOXGLOVE.—*Digitalis.* This is an indigenous biennial plant, which grows plentifully in this country, and flowers during part of the months of July and August. The leaves were formerly employed as an application to ulcers and scrofulous tumours; but from their deleterious quality were seldom used as an internal remedy. Foxglove was

found to possess remarkable power in diminishing the frequency of the human pulse, therefore it was expected to be found a valuable medicine in those internal inflammations which so frequently occur in horses, their most dangerous fevers depending on this cause; and when the inflammation attacks an important part, such as the lungs or bowels, it generally terminates fatally, unless that most powerful remedy, bleeding, be employed at an early period. Foxglove, on these occasions, it was thought, would greatly assist this remedy, particularly in inflammation of the lungs. It was, therefore, introduced into veterinary practice, but was not attended with the success expected from it. The other complaints in which it has been chiefly employed, are chronic cough, or imperfect wind and swelling of the legs; but it does not appear to do any good in these complaints.

Foxglove is an active medicine in the horse, and cannot be given with perfect safety in larger doses than half a dram; but this must be gradually increased until some effect is perceived: the horse, however, must be carefully watched, that the effect may be seen; for if too much be given, the stomach is sometimes materially injured. The most frequent effect of foxglove is to take off the appetite: and that effect, when it has been given in a full dose, generally continues two or three days; it should, therefore, be given with caution.

Whatever may be the virtues of foxglove, it can be of no use in any kind of fever whatever. The

fevers of horses are cases of internal inflammation, and can only be cured by one remedy, that is, bleeding until the animal becomes faint. It is necessary generally to take off two gallons of blood, seldom less than six quarts: and unless this is done, no remedies will avail. Medicine is of very subordinate use in fever. No apprehension need be entertained from the debility or faintness, which follows plentiful bleeding. If the horse drops down from faintness there is no danger. One plentiful bleeding is not always sufficient; a second, a third, or even a fourth, may be necessary. Horses are sometimes relieved for a time by less copious bleeding and medicine; but in a way that only serves to protract the fatal termination. One copious bleeding until the animal faints generally completely subdues the disorder, and renders every other remedy unnecessary.

FRANKINCENSE.—*Thus.* A resinous substance, similar in its medicinal qualities to yellow resin.

FRAXINUS ORNUS; *Succus Spissatus.* Manna Ash; the Concrete Juice. See Manna.

FUMIGATIONS. These consist of substances which emit fumes or vapours by the application of heat, or other means. They are generally employed to destroy contagion; and though the fumigations recommended in books of farriery, as well as those in common use, are inadequate to that purpose, yet there are certainly some which may be productive of great advantage. Fumigations are employed to prevent the spreading of epidemic distempers, or to

destroy the contagion of glanders; for which purpose I cannot, from experience, recommend any thing; though the nitrous fumigation of Dr. C. Smith, or the following, may be tried. When a stable is contaminated with glanders, the only means I can recommend with confidence are, in the first place, to remove every particle of litter, hay, dust, &c. from the stable; as well as the pail, collar, and every thing which belonged to, or was used for, the infected horse. The rack, manger, and every thing on which the glandered horse could possibly have rubbed his nose, are then to be well scraped, and afterwards washed with hot water and soft soap.

After this has been done, the manger, &c., should be well washed with water; for should any soap remain, it might leave a bad smell in the stable. The floor or pavement of the stall is also to be carefully washed and swept. After this the whole is to be white-washed with whiting or slaked lime, and a solution of glue. Before any sound horses are admitted into the stable, the following fumigation may be employed; the number of pans in which the materials are placed being adapted to the size of the stable.

Take of

Common salt . . . . 8 oz.
Manganese, powdered. . . . . 6 oz.

Let these be well mixed, and placed in an earthen dish; then pour on the mixture, gradually, of sulphuric acid, four ounces. As soon as the latter is

added, the operator should leave the stable, shutting both the door and the windows. The fumes which arise from this mixture are highly injurious to the lungs, and must be carefully avoided; therefore this fumigation can be performed only in an empty stable. During the whole day the stable-door and windows are to be kept shut; but at night they may be thrown open, that there may be no danger on entering the stable the next morning. I believe this to be the only efficacious fumigation, having found that when glanderous matter is exposed to it a short time, it is rendered perfectly harmless. The fumes which are generated by pouring oil of vitriol, or vitriolic acid, on powdered nitre, are said to be very effectual in destroying human contagion; how far it may be serviceable in veterinary practice remains to be ascertained; but, as the fevers of horses do not appear to be infectious, there is no great probability of its proving useful. The term *fumigation* is applied, by French veterinary writers, to the vapour arising from boiled herbs, or bran and hot water.

GALANGAL; the Root.—*Galangæ Radix.* This is a warm stomachic bitter, calculated to remove indigestion and flatulency, and to promote the appetite.

The dose is from two drams to half an ounce.

GALBANUM.—*Galbanum.* This plant is a native of Syria and some parts of Africa, and affords a gum-resin, similar in its medicinal qualities to ammoniacum; that is to say, antispasmodic, deob-

struent, and expectorant. It is, however, inferior to the latter medicine in efficacy, and may be said to hold a middle place between it and assafœtida. The dose is about three drams.

GALLIPOT. An impure species of turpentine.

GALLS.—*Gallæ*. An excrescence from the oak tree, produced by the puncture of an insect. Galls are powerfully astringent, but not often employed internally; they, may, however, prove useful, in conjunction with other remedies, in suppressing obstinate diarrhœa.

The dose from two drams to four.

GALVANISM. It has been discovered within these few years, that an effect somewhat like electricity may be produced on the body by means of different metals and an acid liquor; and that a short time after death the muscles may be excited to action by the same means, producing the most curious phænomena. From the name of its discoverer, Galvani, it is termed *Galvanism*. It has lately been employed for the cure of certain diseases, and, it is said, with considerable success; therefore it may be worth a trial in those disorders of the horse for which at present we have no remedy; such as gutta-serena, and other diseases of the eye. (See Wilkinson's Elements of Galvanism.)

GAMBOGE.—*Gambogia*. The tree from which this gum is obtained is a native of Siam and Ceylon. Gamboge is perfectly inodorous, and has an insipid taste. In man it acts as a violent cathartic, often producing nausea and vomiting; but it is very rarely

used for veterinary purposes, as its effects are uncertain, and it is liable to produce griping.

The dose is from two drams to half an ounce; or two drams of gamboge may be combined with three of aloes.

GARLIC.—*Allium.* This is often employed by farriers as a remedy for coughs and thickness of wind; and, I believe, that in coughs of the chronic kind it has sometimes been found efficacious.

The dose is from one to two ounces.

The cloves are separated and pounded in a mortar until they form a sort of paste, which is formed into balls with liquorice powder: sometimes they are boiled in milk, and given in the form of a drench. Gibson speaks highly of garlic.

GENTIAN; the Root.—*Gentianæ Radix.* A perennial plant, found in Switzerland, Austria, the Pyrenees, and North America. It possesses no particular odour, and its taste is extremely bitter, on which account it is very generally employed in the same manner as bark and other bitters, to give vigour to the stomach and improve digestion. It generally requires to be joined with stimulants; such as ginger, cassia, myrrh, cascarilla, &c.; and when any acidity is suspected to exist in the stomach, a small quantity of soda is an useful addition. Gentian is the basis of that famous horse powder termed *diapenté.* Gentian root sometimes becomes rotten and useless: the purchaser should, therefore, examine before he buys, and choose such parts as are sound, rather tough, and extremely bitter. It is to

be feared that the powdered gentian of the shops is not so good as it should be; and it is to be lamented that druggists in general think any thing good enough for horses.

The dose of pure gentian is from two to three drams. (See Tonics and Stomachics.)

GEOFFRÆA INERMIS. See Cabbage-tree Bark.

GERMAN LEOPARD'S-BANE. See Arnica Montana.

GERMANDER WATER.—*Scordium.* A low shrubby plant, bitter and somewhat astringent; but not sufficiently strong for veterinary purposes.

GEUM URBANUM; *Radix.* The Root of Avens. This is an indigenous perennial plant, flowering from May to August. Its odour is fragrant and spicy, and its taste bitterish and astringent. Its properties are astringent, tonic, and antiseptic, and it may be advantageously employed in those diseases which depend on a relaxed state of the system, or of any particular part; as in diarrhœa, red-water (where no fever exists), &c. This medicine has been much more extensively used on the Continent than in this country; and I am not aware that it has yet been introduced here into veterinary practice; but it certainly deserves a trial, especially as it is an indigenous plant, and should therefore be sold at a low price.

GINGER; the Root.—*Amomi Zingiberis Radix.* This plant is originally a native of the East Indies, but is now very extensively grown in the

West Indies also. The root only is used in medicine, and this is prepared in two ways, producing two sorts of ginger, the white and the black. The former is generally employed for culinary purposes, and the latter, being the cheapest, is most frequently used as a horse medicine.

I consider ginger as the most useful stimulant in the veterinary materia medica; when joined with aromatics, such as allspice, caraway-seed, anise-seed, cummin-seed, &c., or their essential oils, it forms an efficacious cordial; and with emetic tartar and opium an excellent diaphoretic, for giving gloss to the coat, and relaxing the skin. Joined with bitters, it makes a good stomachic; with squills an expectorant, often relieving obstinate coughs.

Ginger is extremely beneficial in weakness and flatulency of the stomach; and assisted by other remedies, such as warm beer, it seldom fails of curing the flatulent colic or gripes. (See Carminatives.) It is generally added to aperients, in order to correct their liability to produce griping.

The dose is from one dram and a half to three drams.

It should be recently powdered when used; but in a well-stopped bottle the powder may be kept a considerable time without losing its strength.

Ginger is frequently thrust whole, after being chewed, up the fundament of a horse, in order to make him carry his tail high, and give him a sightly appearance. It is certainly a very improper practice, and, though it may very rarely happen, I can

easily conceive that a very considerable degree of irritation of the *rectum*, and tenesmus may be produced by a frequent repetition of this operation. Many horses belonging to dealers are frequently shown to customers a dozen times a day, or oftener, and are invariably *figged*, as it is termed, prior to being led out of the stable. After a short time the irritation produced by the ginger causes them to make violent efforts to dung, and the ginger is generally expelled; but these very efforts prove to what a stimulus the poor animals have been subjected; and stimulants, especially strong ones, frequently repeated, may eventually produce inflammation.

GINSENG.—*Panax Quinquefolium.* This is a perennial plant, found in Tartary and North America. In the former country it is so scarce, that the Chinese, who have a very high opinion of it, probably on account of the difficulty of obtaining it, purchase it at the most extravagant prices: whereas, in the latter, it is so plentiful that it is hardly noticed. It is a moderately warm aromatic, and a gentle and agreeable stimulant.

GLAUBER'S SALT. See Sulphate of Soda.

GLYCYRRHIZA. See Liquorice.

GLYSTER. See Clyster.

GOLDEN SULPHUR OF ANTIMONY, now named PRECIPITATED SULPHURET OF ANTIMONY.—*Sulphuretum Antimonii Precipitatum.* This is an orange-coloured powder, insoluble in water, and inodorous. It is said to increase the febrifuge power of antimonial powder. (See Febri-

fuge.) This preparation of antimony is scarcely known to farriers, and, I believe, seldom used by Veterinarians. It may be found useful, however, in obstinate diseases of the skin, either alone or joined with mercurials, such as Ethiop's mineral.

The dose is from one dram to two: perhaps even more may be given with safety; but it is adviseable to begin with a small dose.

When pure, this preparation of antimony readily catches fire; it is frequently adulterated with chalk, which fraud may be detected by mixing it with an acid, and if any chalk be present effervescence will take place.

GOULARD'S EXTRACT, now named LIQUID SUBACETATE OF LEAD. (See Acetate of Lead, and Lead.) *Liquor Plumbi Subacetatis.* This is made from litharge and vinegar, by simmering them together over a gentle fire, until the vinegar has dissolved as much as it is capable of doing. Goulard, therefore, is nothing more than a solution of litharge in vinegar. It is a very useful application in cases of external inflammation, and may be used either as a lotion or in the form of poultice. Goulard lotion is made by mixing half an ounce of the extract to a pint of rain or river water: some add to this a little camphorated spirit, or some distilled vinegar; but when the lotion is intended for the eyes, there must be a much larger proportion of water; not less than a quart, and the lotion should be filtered.

Goulard poultice is made by mixing as much of the lotion, with bran, linseed meal, or any proper

materials for a poultice, as will give them a proper consistence. (See Poultices and Lotions.)

Goulard is never used undiluted, nor is it given internally.

GOOSE-FAT.—*Adeps Anserinus*. This is a very greasy, unctuous substance, but possesses no superiority over axunge.

GRAINS OF PARADISE.—*Cardamomi Semina*. A warm stimulating seed, often used by farriers in the diseases of horned cattle as a cordial; and where medicines of that kind are required, it is certainly very proper: but it is necessary to consider the case well before this medicine is employed; for if the complaint be of an inflammatory nature, Grains of Paradise, being a powerful stimulant, may do much injury

The dose is from three to six drams, or one ounce.

GRANATI CORTEX. See Pomegranate.

GRATIOLA OFFICINALIS. Hedge Hyssop. This plant is a native of the south of Europe, and delights in damp, marshy situations. Its properties, according to the dose, are diuretic, cathartic, or emetic; very powerful anthelmintic qualities are likewise ascribed to it; and we are informed that in the hospitals at Vienna confirmed cases of *Lues Venerea* have been cured by it. Dr. Sumner has written a treatise on the virtues of hedge-hyssop, in which he extols its efficacy in epilepsy. I am not aware that this medicine has received a sufficient trial by veterinary practitioners.

GROUND IVY was formerly considered as an excellent remedy in pulmonary complaints; but it is now disregarded by medical practitioners, and is certainly useless in veterinary practice.

GRUEL is an useful drink for horses on many occasions, and when made carefully, or sweetened with sugar or treacle, and sometimes seasoned with salt, they will often drink it, and save the trouble of drenching. It is a good vehicle for such medicines as are of a stimulating or acrimonious nature, such as oil of turpentine. Gruel is made either with oatmeal or groats, barley-meal or pearl-barley, fine wheat flour or arrow-root; it may be made also with sago, salep, or tapioca; either of these is to be boiled in water, and for some purposes in milk or broth.

Gruel is often made merely by stirring some oatmeal into warm water, but it is better when boiled; and when groats or pearl-barley are employed, it should be boiled a short time, and the first water thrown away; the gruel will then be free from an unpleasant taste which these substances contract by keeping: when they are first crushed or bruised the gruel is richer, and more expeditiously made. Gruel is an useful restorative for weak or convalescent horses, being very nutritious and easy of digestion: perhaps nothing is more nutritious than wheat-flour gruel made with milk and sweetened with sugar. In India it is a common practice to give horses strong broths, thickened with grain or flour, and seasoned with pepper or other spices, when they work

hard, or as a restorative cordial. Infusion of malt makes a good nutritive drink for horses; but good sweet groats make an excellent gruel. Oatmeal is sometimes musty, and gruel made with it has often some degree of bitterness. When gruel is given as a cordial restorative after hard work, a little beer and ginger may, on some occasions, be added. Horses that are exhausted by long fasting and fatigue, are soon recruited by taking such gruel. Horses are very nice in their drinking, therefore the gruel should be made in a clean saucepan, free from the smell of meat, smoke, or fat. For some purposes, or where it is inconvenient to boil the gruel, a little oat, barley, or wheat-meal, may be stirred into warm or cold water.

It is a good practice to accustom horses to drink gruel, as, after a hard day, many hunters show a disinclination to eat, but will drink with avidity; and, if they will drink gruel instead of water, it is not of much consequence if they fast for some time. No horse, it should, however, be remembered, is fit for hard work if he be not a good feeder; but the best horse may refuse his food if forced to over-exertion.

GUAIAC.—*Guaiacum.* This tree is a native of Jamaica, Hispaniola, and some parts of America. Every part of it possesses medicinal properties, but the wood and gum alone are used. The former is sometimes employed in human medicine, as an ingredient in alterative decoctions, but never in veterinary practice. The resin, commonly called *gum*

guaiacum, is sometimes used as an alterative. Farriers employ it also in what they suppose to be rheumatic lameness; but I believe without any advantage. Rheumatism seldom attacks horses: when it does occur, a purgative is the best remedy.

The dose of gum guaiacum is from half an ounce to six drams. (See vol. i.)

When guaiacum is adulterated with common resin ,if a portion of it be thrown into fire, an odour of turpentine will immediately be emitted.

GUINEA PEPPER. See Cayenne Pepper.

GUM.—*Gummi*. There are various kinds of gum, which may be distinguished by their solubility in water, and by forming therewith a mucilage. The principal are, gum arabic, gum tragacanth, and Indian gum. The first two are the best. Gum dissolved in water makes a useful drink in inflammatory complaints of the bowels, kidneys, bladder, and lungs.

GUM ARABIC. See Acacia Vera.

GUM RESINS.—*Gummi Resinæ*. These seem to be compounds of resin with extractive and essential oil, and probably some other hitherto undiscovered principles. Those which are officinal are gum ammoniac, scammony, galbanum, assafœtida, myrrh, gamboge, sagapenum, olibanum.

HÆMALOXYA LIGNUM. Logwood. This tree is a native of South America, and is sometimes called Campeachy wood, from its being found in great quantity at Campeachy, in the Bay of Honduras. Logwood is tonic and astringent, but

not sufficiently so to be used as a horse medicine. (See Logwood.)

HARTSHORN.—*Cornu Cervi.* The horns of stags do not materially differ from bone, except in containing a larger quantity of cartilage. On boiling they yield a great deal of jelly, which is more readily extracted when they are crushed or cut into shavings; by distillation they yield ammonia and animal oil.

HARTSHORN, SPIRIT AND SALT OF. See Ammonia.

HEDGE HYSSOP. — *Gratiola Officinalis;* which see.

HELLEBORE, BLACK AND WHITE.—*Helleborus Niger. Veratrum.* Black hellebore is a native of Austria, the Apennines, and Italy; white hellebore of Greece, Italy, Switzerland, and Russia. They both act as drastic cathartics and emetics on the human frame, producing, in large doses, vertigo, inflammation of the stomach, and convulsions. The root of this plant, particularly of white hellebore, is extremely acrimonious; for if wounded while fresh it emits a juice capable of blistering the skin.

Powdered white hellebore is often employed as an ingredient in blisters. It is used also in ointments for the mange, and other cutaneous diseases. A decoction of white hellebore is frequently used for the same purpose; but other medicines are generally added to it; as *sulphur vivum*, turpentine, white vitriol, or alum. Hellebore has been tried, as an *internal* remedy, in the small dose of half a

dram, and has been declared to be a very dangerous medicine.

However, I have lately had an opportunity of trying the effect of white hellebore, and did not find it so violent or so dangerous as it was said to be, after an experiment made at the Veterinary College. To a glandered horse I gave half an ounce of the powder of white hellebore, expecting it would destroy him, but it produced no effect; an ounce was then given, which caused an appearance of sickness, and a copious discharge of saliva from the mouth. It was given afterwards to several horses; and was uniformly found in the dose of half an ounce given daily to produce the effect above described. In some, the first dose caused an appearance of sickness and salivation; others took several doses before any effect was observed. It was given daily in a case of farcy, in the dose of half an ounce, and the horse got well: no other remedy was employed except blisters. In none of the experiments did it cause any dangerous symptoms, but it certainly caused a very painful sensation in the stomach. (See Cathartics, remarks on.) The general effect of hellebore is nauseating, by which it lowers the action of the heart very considerably, and may, therefore, be advantageously employed in inflammatory diseases. This, however, has been denied by some veterinarians.

Black hellebore is never used in horse medicine.

HEMLOCK.—*Cicuta. Conium Maculatum.* This is an indigenous plant, growing generally in

moist shady places, and flowering in June and July. It is a strong narcotic; but supposed to be, on some occasions, an useful medicine, possessing, like opium, an anodyne quality, but not so certain in its effect. It is said, however, not to produce costiveness, like opium. The complaint in which it has been chiefly employed in veterinary practice is obstinate cough, depending upon irritability.

The leaves are to be carefully dried and powdered. The powder must be kept in a well-stopped bottle, from which the light should be excluded. The dose is about a dram; but it may be gradually increased to a much larger quantity.

There is an extract made from hemlock, which, when prepared, is a very convenient form, and not less efficacious than the powder. The dose is about a dram; but this also may be gradually augmented to a considerable quantity.

A decoction of green hemlock is said to be an useful fomentation in painful wounds and tumours. Since writing the above, I gave about half a pound of green hemlock to a young ass; he ate it readily, but it did not produce any sensible effect. It has been said that goats eat hemlock, and are nourished by it.

It should be remarked that, as the powers of the powder are often impaired by keeping, whenever a fresh parcel or quantity of the herb is used, it should first be administered in small doses, in order to ascertain its strength. Vinegar is said to be the best antidote for an over-dose of hemlock, after bleeding and purging have been employed.

Hemlock, Water.—*Cicuta Virosa.* This was discovered by Linnæus to be a violent poison to cattle.

HENBANE.—*Hyoscyamus.* This is a biennial plant, found in great abundance in most parts of Britain. Like hemlock, it is a powerful narcotic, and free from the constipating effect of opium. It has not hitherto been used in veterinary medicine.

The seeds are said to be the most powerful part of the plant: but the powdered leaves and the extract are more commonly employed in human medicine.

HEPAR SULPHURIS. Liver of Sulphur. An old name for sulphuret of potass. This medicine has been found efficacious in some cutaneous diseases, as mange, for instance, and has also been recommended as an antidote to some poisons, as arsenic, lead, and mercury; but it has been too seldom tried to ascertain its powers of counteracting the effects of these metals. Sulphuret of potass is deliquescent, and is decomposed by exposure to atmospheric air. It likewise suffers decomposition by being added to water, part of the sulphur taking up the oxygen of the water and becoming acidified, thereby forming sulphate of potass; while the hydrogen of the water, combining with another portion of the sulphur, is given off in the form of sulphuretted hydrogen gas. Hydroguretted sulphuret of potass is also formed by the remaining sulphur uniting with the alkali. Sulphuret of potass is decomposed by acids, the acid forming a neutral salt with the potass, and the sulphur being liberated.

It is very necessary to remember this fact when prescribing sulphuret of potass, otherwise its action may be entirely changed.

The dose is from a scruple to a dram or more.

HEPATIC ALOES. See Aloes.

HIERA PICRA. A warm stomachic purgative, composed of aloes, five parts, canella one part. A somewhat similar composition has been admitted into the London Dispensatory, under the name of compound powder of aloes; but in this gum guaiacum and aromatic powder are ingredients.

Aloes	$1\frac{1}{2}$ oz.
Gum guaiacum	1 oz.
Aromatic powder	$\frac{1}{2}$ oz.

HIRUDO. The Leech. Leeches are not employed in the diseases of horses and cattle. See Leeches.

HOG'S LARD.—*Adeps Suillus.* An article of some importance in veterinary surgery, being the basis of almost every ointment.

Hog's lard possesses a laxative quality, and may be given to the extent of half a pound, melted and mixed with warm water or peppermint water, as a substitute for castor oil, olive oil, or linseed oil, when neither of these can be procured. Fresh hog's lard melted, and mixed with a little salad oil, forms a good softening ointment for horses' heels that are subject to cracks.

HONEY.—*Mel.* A small quantity of honey, dissolved in linseed infusion, is often used in those

troublesome coughs which arise from irritation, and serves in this way as a good auxiliary to more important remedies. Honey is sometimes added to a solution of alum, as a lotion for the mouth, when it is inflamed and sore.

Honey is nutritious and rather laxative, and may be occasionally given as a restorative mixed with milk, or with gruel made of wheat-flour and milk. (See Gruel.) With vinegar it forms an oxymel; and when squills, garlic, &c. have been previously infused in the vinegar, it forms with it oxymel of squills, garlic, &c., which are considered good medicines in chronic cough. Honey is a convenient substance for forming balls. It is sometimes used also as a basis for liniments or ointments (see Egyptiacum); and when made into a syrup with an infusion of roses, it forms honey of roses, which, with alum, forms an useful wash for soreness of the mouth, lampas, &c. (See vol. i.)

HOOF OINTMENT, is prepared from

Tar and tallow, of each equal parts.

When melted let the mixture be removed from the fire, and stirred until it is cold.

This ointment is applied to the coronet and heels, when dry and cracking.

HOP.—*Humulus.* A decoction of hops is a good stomachic bitter and anodyne, possessing a weak narcotic quality. It forms also a good anodyne and discutient fomentation.

HORDEUM DISTICHON. See Barley.

HOREHOUND.—*Marrubium Vulgare.* A

bitter herb, with some degree of roughness, or astringency.

Horehound is rather a popular remedy for obstinate coughs, asthmas, and other complaints of the lungs, but has been very seldom employed in veterinary practice: it may however be used in chronic cough, when the usual remedies fail, either in the form of powder, or decoction.

No great precision is necessary in adjusting the dose; one or two ounces of the powder, or a quart of the decoction, may be given at once.

HORSE-CHESNUT.—*Æsculus Hippocastanum.* The bark of this tree has been proposed as a substitute for Peruvian bark, but is scarcely ever used.

HORSE-RADISH.—*Armoracia.* The root of horse-radish, when fresh, is a powerful stimulant. All its virtues may be extracted by distilling the root with water, or spirit; in which state it may be kept a long time without losing its strength. It is said to possess also a diuretic and diaphoretic quality. Its acrimony is destroyed by boiling; it is therefore given either as an infusion, or beaten into a mass with flour, as a ball. If beaten into a mass, and formed into a paste, with flour of mustard and water, it is capable of blistering the skin.

HYDRAGOGUES. This appellation is given to those medicines that act on the kidneys, increasing the secretion of urine. The real derivation of the word, however, would imply anything which produced an evacuation of liquids, and therefore the

epithet may be and is very justly applied to drastic purgatives, which induce liquid motions.

HYDRARGYRUM. Mercury; which see.

HYDRARGIRI SUBMURIAS. Submuriate of Quicksilver. Calomel. See Calomel.

HYOSCYAMUS. See Henbane.

HYPERICUM. St. John's Wort. An oil of St. John's Wort is sold by druggists, which appears to be olive oil coloured with verdigris, or the leaves of some vegetable. It is still employed by farriers as an ingredient in strain oils, though not more efficacious than olive oil.

HYSSOP.—*Hyssopus Officinalis.* This plant has been esteemed as a pectoral medicine, but is seldom employed in modern practice; nor as a veterinary medicine is it worth notice.

ICHTHYOCOLLA. See Isinglass.

INFUSIONS.—*Infusa.* Medicated liquids, made by pouring boiling or cold water on any vegetable or medicine, whose virtues it is capable of extracting. When the medicinal principles of a vegetable are of a volatile nature, and liable to evaporate by boiling, they are extracted by being steeped in hot or cold water. The liquid thus obtained is termed hot or cold infusion. Chamomile flowers, peppermint, and other aromatic herbs, are to be infused in hot water; logwood, guaiacum, and bark, require to be boiled, the latter a short time only, the two former much longer. (See Decoction.) The menstruum of infusions is water; if alcohol be used instead, the preparation is then called a

tincture, and, when wine or vinegar are employed, it is termed a medicated wine or vinegar.

INJECTIONS.—*Injectiones.* Liquids (generally medicated) which are injected into any cavity of the body, by means of a syringe, gum-bottle, or other instrument.

INULA HELENIUM. See Elecampane.

IODINIUM. Iodine. This substance is found in a state of nature in many marine plants. Its properties are stimulant, and its chief action seems directed to the absorbents, which it excites in a very high degree. I am not aware that it has yet been used as a horse medicine, although it has been successfully employed to reduce various swellings incidental to the human frame, especially those of the glands, and has likewise been found beneficial in dropsy.

IPECACUAN.—*Ipecacuanha.* Ipecacuanha is sometimes employed as an expectorant in chronic cough, and asthmatic affections, and I believe with good effect when joined with squills, ammoniacum, &c. (See Expectorants.) According to Vitat, from half an ounce to an ounce given to a horse, makes him snuffle and sneeze for some minutes; at the end of an hour he appears agitated, the belly tense, but the arteries and flanks beat with violence for four or five hours: these appearances gradually go off. Given to the extent of three ounces it distresses the horse greatly; he lies down and soon gets up again, his flanks beat, he sighs and groans, and unless water be given him he dies convulsed.

On these symptoms going off, his dung is a little softened, but it does not purge. I once gave an ounce to a young ass, but it did not produce any perceptible effect. Bourgelat says, it is employed in chronic bowel complaints, in molten grease, and dysentry, with success, either as an infusion or decoction. He also observes, that though it does not cause any sensible evacuation in large animals, it purges the sheep; and in the pig, the dog, and the cat, it causes vomiting or purging, according to the quantity given, and the state of the stomach and bowels. He has given it to broken-winded horses, but without success. He states the dose for a horse to be from 72 grains to one ounce; for a dog, from four grains to twenty. On looking over M. Volpi's work, I do not observe Ipecacuanha prescribed on any occasion; but emetic tartar appears to be a favourite medicine with him. (See Emetic Tartar.)

IRIS FLORENTINA. Florentine Iris. A weak cathartic, of no use in veterinary practice.

IRON.—*Ferrum.* This is one of the most abundant metallic productions of nature; its ores are foundin almost every partof the globe in the soil and often in the water, and as a constituent of vegetable and animal bodies. The preparations of iron, used in medicine, are 1st, sulphate of iron, or salt of steel; 2nd, muriate of iron; 3d, subcarbonate of iron; 4th, tartarized iron; 5th, red oxide of iron, or colcothar of vitriol; 6th, rust of iron; and 7th, scales of iron. They are all considered powerful tonics in the human body, but are not often

given to horses. The dose of No. 1, is from 1 dram to 3. No. 2, 1 dram to 2 or 3. No. 3, 2 drams to 4. No. 4, 3 drams to 5. No. 5, 4 drams to 6. No. 6, 2 drams to 4. No. 7, 2 drams to 4, finely powdered. Preparations of iron are generally mixed with aromatics, and sometimes with soda. In speaking of the metallic preparations, I think it necessary to repeat that great caution is required in their use. Iron is, perhaps, the most innocent, and may be possessed of considerable tonic power; but before it is employed, let wholesome food, moderate exercise, and good grooming, have a fair trial. (See vol. i. 15th edition, article Stable.)

ISINGLASS.—*Ichthyocolla.* This is said to consist of the dried membranes of the sturgeon, or some fish resembling it: the mode of preparation, however, is kept a profound secret. The greater part of it is made in Russia. When dissolved in water it forms a strong mucilage, which is an useful emollient, and serves to sheathe the bowels, bladder, &c. when inflamed or irritated.

JALAP, the Root;—*Jalapæ Radix.* In the human body, the root of jalap is a certain and efficacious purgative; and there is scarcely an old book on farriery in which it is not recommended for horses as an ingredient in purgative balls or physic; which practice is still followed by farriers, who generally put two or three drams of jalap into every dose of physic. It was tried, however, first at the Veterinary College, and was found to have no purgative effect on the horse, though given in considerably

larger doses than even farriers employ; but I have observed that in a very large quantity it occasions sickness, and some degree of purging, though its effects in this way are by no means sufficient to induce any one to employ it as a purgative alone.

I once gave eight ounces of jalap at one dose to a glandered horse, that was in other respects healthy, and had not been taking any other medicine: in about six hours the horse appeared sick, and in pain; he refused both food and water; during the night he appeared to have had some small watery stools, several of which were perceived also the next day; but they were in very small quantity, and accompanied with pain. The sickness continued all the second day, and on the following he recovered. It is not very improbable, however, that jalap, in combination with aloes and calomel, may have an useful effect. (See Cathartics, remarks on.) I have heard it remarked that jalap certainly assists the operation of aloes, and that even Cape aloes, when joined with jalap, may be employed as purgatives.

JAMAICA PEPPER or ALLSPICE.—*Pimentæ Baccæ.* This is a good carminative, and cordial, and may be given in doses from half an ounce to an ounce, in flatulency of the stomach and bowels. It may also be used as an ingredient in cordial medicines.

The following tincture is strongly recommended by Mr. Bracey Clark, as an excellent remedy for the flatulent colic, gripes, or fret.

Jamaica pepper .... 1 lb.
Proof spirit .... 6 pints.—Mix.

Let the allspice be powdered, and mixed with the spirit; the bottle to be well corked, and frequently shaken. In two or three weeks the tincture will be fit for use. The dose about four ounces diluted with water, and repeated every hour until the horse is relieved. (See Cordials and Carminatives.)

JAMES'S POWDER.—*Pulvis Jacobi.* Though the preparation of this medicine has been hitherto kept secret, there is no reason to doubt its being composed chiefly of antimony, and nearly the same thing as that which is sold in the shops by the name of *Antimonial Powder*. (See Antimony.) I can venture to assert that, as a horse medicine, this is as useful and efficacious as *James's Powder*. It is said to be an excellent medicine in fevers of every kind; and, though usually given in the small dose of a scruple, or half a dram, may be exhibited with perfect safety and better effect in a much larger quantity. I never give less than two drams, and sometimes three; and I have seen even one ounce given at a dose without the least inconvenience. It seems to act on the skin like emetic tartar, and promotes insensible perspiration; but I do not think it so certain in its effects as emetic tartar; it is sometimes joined with opium, camphor, nitre, or ginger, according to the nature of the disease: with ginger it forms a good medicine for horses that are hide-bound; but this compound is not proper in fevers, or any complaint arising from inflam-

mation: and the fevers of horses are almost always inflammatory. It is most commonly given with nitre, or with nitre and camphor; and some practitioners prefer it, as a fever medicine, to tartarized antimony (*Tartar Emetic*). It has been asserted that it is much improved as a diaphoretic in the human subject, by the addition of one fourth of its weight of precipitated sulphuret of antimony. (See Febrifuges.) James's powder is insoluble in water, and should therefore not be administered in a drench. According to the analysis of this medicine, it has been found to contain antimony, phosphate of lime, and potass.

JAPAN EARTH.—See Acacia Catechu.

JESUITS' BARK. (See Bark.)

JOHN'S-WORT.—*Hypericum.* There is an oil of John's-wort kept by druggists, which appears to be nothing more than common oil coloured with verdigris. The herb was formerly employed in fomentations, but is now thought unworthy of notice.

JUNIPER BERRIES.—*Juniperi Baccæ.* The juniper shrub is an indigenous evergreen; and is found generally growing on downs and heaths. It flowers in May, and bears berries, whose medicinal properties are diuretic, carminative, and stomachic. They should be allowed to remain on the tree for two years before they are gathered, as they do not come to maturity before that time. Juniper berries generally form a part of diuretic balls and drenches; they are recommended also in flatulency of the stomach and bowels.

The dose is from one to two ounces.

Juniper berries are often injured by keeping; becoming dry, shrivelled, or nearly rotten. The purchaser should choose such as are plump, rather heavy, and moist internally.

An oil is obtained from juniper by distillation, which seems to be the part on which the virtues of the berry depend. Oil of juniper is carminative and diuretic: the dose is from one dram to two or three. It is generally highly adulterated with oil of turpentine; but this admixture does not injure it materially, oil of turpentine being very similar to it in its medical qualities, though more powerful.

JUNIPERUS SABINA. See Savine.

KALI. A name which the London College of Physicians once gave to pure vegetable alkali, or potash. (See Potash.) It is now named potash.

KALI, PREPARED. See Carbonate of Potash.

KERMES MINERAL.—*Sulphur Stibiatum Fuscum.* A red powder prepared from antimony, nearly the same as the golden sulphur of antimony, and recommended as an alterative, in doses from one to two or three drams. (See Antimony, and Golden Sulphur of Antimony.)

KINO.—*Kino.* The greater part of the kino used in this country at present comes from the East Indies. It is a most powerful astringent, and is often successfully employed to combat obstinate diarrhœa, red water, and other diseases dependent on a relaxed state of any organ or viscus. The dose, in substance, is from two to four drams. A

tincture of kino is likewise made, which may be administered in doses of from three or four to six drams, or more. In prescribing the tincture it is necessary to recollect that nitrate of silver, muriate of mercury, sulphate of iron, acetate of lead, the alkalies, and strong acids are incompatible with it.

KRAMERIÆ RADIX. Krameria or Ratanhy Root. This plant is a native of Peru, and flowers throughout the year. It is but little known in this country as a medicine, but has been very successfully used on the continent in all cases requiring astringents. It is also accounted stomachic, and its astringent qualities are such, that it has frequently been employed as a styptic. It may be exhibited in the same doses as kino.

LAC. A resin of a dark colour, deposited by an insect of the East Indies on the small branches of trees. It is now employed only in the composition of sealing-wax and varnishes.

LAC AMMONIACI. A preparation of ammoniacum not used in veterinary medicine.

LACTUCA SATIVA. Lettuce. The leaves and stem of the lettuce contain a milky fluid, which, after having been exposed for some time to the atmosphere, turns of a brownish hue. This is denominated *Lactucarium*, and has been ascertained to possess very considerable narcotic powers. It has been particularly recommended for allaying the cough in phthisis pulmonalis. Whether it would be of any service in the chronic coughs of horses I do not know, as I have never employed it myself, nor

have I heard of its receiving a trial from any other Veterinary Surgeon. The narcotic qualities of the lettuce have led many farmers to give it to fatting stock, and they have been found to thrive greatly upon it, as it induces them to take a great deal of rest. Its soporific virtues are greatest when it is in flower.

LACTUCA VIROSA. Strong-scented or Wild Lettuce. This plant is indigenous, and is found growing in great abundance in hedge rows and ditches. Its expressed juice is narcotic and diuretic, and it has been greatly lauded by some physicians, as a remedy for dropsy. It is not used as a horse medicine.

LADANUM.—*Ladanum.* A resinous substance brought from Candia. It has been recommended as a pectoral medicine; but probably does not possess any quality of that kind, as it is now used only as an ingredient in a warm stimulating plaster, which is of no use in veterinary practice.

LARD. See Hog's Lard.

LAUDANUM.—*Tinctura Opii.* A popular term for tincture of opium. (See Opium.)

LAURUS CAMPHORA. See Camphor.

LAURUS CASSIA. See Cassia.

LAURUS CINNAMOMUM. See Cinnamon.

LAURUS NOBILIS. The Bay Tree. Laurel. This tree, although a native of the south of Europe, bears the winter of this country with impunity. Both the leaves and berries contain an essential oil. The latter are generally brought to us from the

Mediterranean, and are more pungent than the former, which are principally used in fomentations. A considerable quantity of oil is obtained from the berries by expression, and is sometimes used as a stomachic in veterinary medicine. The dose is from half a dram to a dram.

LAURUS SASSAFRAS. See Sassafras.

LAVENDER; the Flowers. — *Lavandulæ Flores.* A plant whose distilled water and fragrant oil are employed in medicine, but not in veterinary practice. There is a compound spirit of lavender, which has been prescribed as a cordial with good effect. The dose about half an ounce in water, or infusion of peppermint.

LAXATIVES. Medicines that open the bowels moderately, so as to increase their secretions, without greatly stimulating or irritating them. They consist of castor oil, olive, or linseed oil, the neutral salts, such as Epsom or Glauber's salts, or even common salt, and small doses of aloes, as in the following formulæ:

LAXATIVE DRENCH.

No. 1.	Castor oil	1 pint.
No. 2.	Sweet oil, or linseed, or rape oil,	1 pint.
No. 3.	Epsom salt..................	6 to 12 oz.
	Whey or gruel	1 quart.
	Castor oil.............	6 to 12 oz.—Mix.
No. 4.	Powdered aloes	2 to 3 dr.
	Carbonate of potash	2 dr.
No. 5.	Water.......................	8 oz.
	Castor oil	8 oz.—Mix.

BALL.

Aloes.................. 3 to 4 dr.
Soap................... 3 to 4 dr.
Syrup enough to form a ball.

LEAD.—*Plumbum.* Many useful preparations are made from this metal; among which are the following:—

LEAD, ACETATE OF, or super-acetate of lead, commonly called sugar of lead, is much used in making cooling lotions and eye-washes. Liquid sub-acetate of lead is commonly named Goulard's Extract, and is used for similar purposes. (See Goulard, Lotions, Collyria or Eye-Washes, and Ointments.)

LEAD, RED, or *Minium.* This is a red powder, made by keeping lead in a high degree of heat: it is used in the composition of plasters, and charges.

LEAD, WHITE, is commonly made by exposing thin sheets of lead to the vapour of vinegar, by which it is converted into a white powder. White lead is often employed in the composition of healing and softening ointment, for horses that are subject to cracked heels. (See Acetate of Lead.)

LEECHES.—*Hirudines.* It is difficult to draw blood by means of leeches, from the horse; it may be accomplished, perhaps, by shaving the part, and scratching it with a lancet: there are no cases, however, in which they are likely to be useful.

LENITIVE ELECTUARY.—*Electuarium Sennæ.* A preparation, of which senna is the prin-

cipal ingredient. It is too expensive and too weak in its effects to be used as a horse medicine.

LEONTADON TARAXACUM. See Dandelion.

LEOPARD'S BANE.—*Arnica Montana.* This plant has been recommended as a febrifuge, but is never employed in veterinary medicine. (See Arnica Montana.)

LETTUCE. See Lactuca Sativa, and Lactuca Virosa.

LEY, CAUSTIC.—*Liquor Potassæ*, vulgó *Lixivium Causticum.* Solution of potass is antacid and diuretic, but I believe it is seldom given to the horse, as we possess more efficient diuretics, and its effects in neutralizing acids are not superior to magnesia, or carbonate of soda.

LICHEN ORCELLA. Litmus; which see.

LIME.—*Calx.* This earth is rarely found in a pure state, but is easily prepared from any of its carbonates by the action of fire. When mixed with 700 times its weight of water it is completely dissolved, and forms lime-water, the properties of which are tonic and antacid. Lime-water is recommended in the disease termed diabetes, which consists in a profuse discharge of limpid urine, causing weakness, emaciation, and hectic fever.

I have seen it used, however, in two cases without success. Lime-water may be made by mixing lime with a large proportion of boiling water, stirring the mixture for some time, and afterwards pouring off the transparent liquor, which is to be carefully

excluded from the air. During the whole process, indeed, there should be as little exposure to the air as possible.

LINIMENT.—*Linimentum.* A term generally given to external applications of the oily kind, but of a consistence rather thicker than oil: sometimes it is applied to more liquid and transparent preparations, such as soap liniment. The following formulæ are given as examples:

SOAP LINIMENT.

Hard soap	1 oz.
Camphor	1 oz.
Oil of rosemary	1 oz.
Rectified spirit	1 pint.

Cut up the soap, and let it stand with the spirit until dissolved, then add the rest.

LINIMENT OF AMMONIA, OR VOLATILE LINIMENT.

Strong solution of ammonia..	1 oz.
Olive oil	2 oz.—Mix.

To this, camphor, or oil of turpentine is sometimes added; and the solution of ammonia is joined, for some purposes, to the soap liniment. The soap liniment is the same as the celebrated opodeldoc, and may be either solid or fluid, according to the proportion of soap used; but it may be made also with soft soap, and is then fluid, with a larger proportion of soap. *Liniment of Verdigris* is noticed under the head EGYPTIACUM.

LINIMENT OF CAMPHOR, COMPOUND.

Camphor . . . . 2 oz.
Spirit of lavender . . . . 1 pint.
Solution of ammonia . . . . 6 oz.—Mix.

Solution of ammonia is named also liquid ammonia, and strong spirit of sal ammoniac. (See Embrocations.)

LINIMENT FOR BAD THRUSHES AND CANKER.

No. 1. Tar . . . . 4 oz.—Melt, and add
Muriatic acid . . . . . . 6 dr.
Verdigris . . . . 4 dr.

Mix: continue stirring until it is cold. (See vol. i. article Thrushes.)

No. 2. Tar, melted . . . . 1 lb.
Strong sulphuric acid, by weight. . . . . 2 oz.

Stir them well together for some time, and immediately before the mixture is used.

LINSEED, or FLAX SEED.—*Lini Semina.* These seeds abound with oil and mucilage, and are well adapted to the composition of those emollient drinks that are so useful in inflammations of the bladder and bowels, or complaints of the urinary passages. A strong mucilaginous drink may be made without bruising the seeds, either by decoction or infusion. (See Emollients and Pectorals.)

Linseed Cake. That part of the linseed which remains after the oil has been pressed out. It is sometimes employed to fatten cattle, and may be

given occasionally to horses. When ground it is sold as linseed meal and linseed powder, and often used in the composition of poultices. It is an ingredient also in most of the horse and cattle powders, and serves to adulterate, on account of its cheapness, many of the medicines sold in powder, as drenches for horses and cattle. It is chiefly used for making poultices.

LINSEED OIL.—*Oleum Lini.* This oil is sometimes employed as a laxative, and, though very inferior to castor oil, and even to olive oil, may be occasionally substituted for it on account of its being much less expensive. It is used also in making pectoral emulsions, and in the composition of liniments; but even for these purposes olive oil is preferable, on account of the drying quality of linseed oil. (See Laxatives.)

LIQUID LAUDANUM. See Tinctures and Opium.

LIQUOR MURIATIS CALCIS. Solution of Muriate of Lime. See *Calcis Murias.*

LIQUOR POTASSÆ. Solution of Potass. See Ley, Caustic.

LIQUORICE; the Root and Extract. *Glycyrrhiza Glabra; Radix et Extractum.* The extract made from liquorice-root is supposed to be of use in relieving cough. In the horse it is not applicable to this purpose, as its good effect depends upon its gradual solution in the mouth, so as to be constantly lubricating the throat. Many writers, however, recommend liquorice in their pectoral and

cordial drenches, probably with a view to render them more palatable.

LITHARGE, or SEMI-VITRIFIED OXIDE OF LEAD.—*Lithargyrus*, vel *Oxydum Plumbi Semi-vitreum*. This oxide is obtained by the simple action of heat and air upon lead. It is employed in making Goulard's Extract and diachylon plaster.

LITMUS. This is a species of lichen. Litmus-paper is used in medicine as a very delicate test of the presence of acid, by which its blue or violet colour is changed to red. It is generally by means of litmus-paper that the urine is tested, when, if a great quantity of acid is found to prevail, alkalies must be administered, and *vice versâ*.

LIVER OF SULPHUR, or SULPHURET OF POTASS.—*Hepar Sulphuris*, vel *Sulphuretum Potassæ*. See Hepar Sulphuris.

LIXIVIUM CAUSTICUM. See Ley, Caustic.

LOGWOOD.—*Hæmatoxyli Lignum*. An extract made from logwood possesses a considerable astringent power. It is often employed by medical practitioners in diarrhœa depending upon relaxation of the bowels; and though it has not yet been introduced into veterinary practice, it would probably be found an useful medicine in similar complaints of the horse, and deserves a trial in cases which have resisted the common remedies.

It may be given in doses from two to three drams. Alum, opium, and some aromatic, such as cassia,

and sometimes chalk, are often joined with the extract. (See Hæmatoxyli Lignum.)

LUNAR CAUSTIC. See Argenti Nitras.

LYTTA. See Cantharides.

MACE. — *Myristicæ Nuclei, et involucrum Macis dictum.* A pleasant aromatic spice, too expensive for veterinary purposes: nor is there any complaint in which it is particularly required; as allspice, cassia, cardamoms, caraway, and anise-seed, are more effectual, and considerably cheaper.

MACERATION differs from infusion only in being continued for a longer time, and can only be employed for those substances that do not quickly spoil.

MADDER.—*Rubia.* This is a perennial plant, and a native of the Levant, the south of Europe, and Africa. The root was formerly used in medicine as a remedy for jaundice. Farriers still employ it for the same complaint (which they term the *yellows*) both in horses and horned cattle.

The dose is about one ounce. (See vol. i.)

Madder has the singular property of turning the bones red, provided its use be persisted in for some time.

MAGNESIA.—*Magnesia.* A white powder, so extremely light that a sufficient dose could not be given to a horse without inconvenience. It is a very useful absorbent in the human body, and well calculated to remove heart-burn, by destroying any acidity that may exist in the stomach; it has also the advantage, in this complaint, of acting as a

gentle laxative. In the horse, chalk, or either of the fixed alkalies, answers the purpose equally well: and if a laxative effect be required, a small dose of aloes may be added.

MAGNESIA, SULPHATE OF.—*Magnesiæ Sulphas.* Epsom Salts. See Sulphate of Magnesia.

MAGNESIA USTA. Calcined Magnesia; which see.

MAHOGANY BARK.—*Swietaniæ Mahagoni Cortex.* This tree grows principally in Jamaica and Spanish America. The bark has been said to possess the same properties as the Peruvian bark.

MALACCA BEAN. The acrid matter which renders this bean useful is contained between two membranes which cover the kernel. The Malays employ it for destroying fungous or proud flesh; and, from its corrosive quality, it would probably be found useful as an external application to horses.

MALLOWS, COMMON.—*Malva Sylvestris.* This is an annual, indigenous plant, and, from the mucilage it contains, is useful in the composition of emollient drinks: fomentations, clysters, and poultices may also be made with it. (See Emollients, Fomentations, and Clysters.)

MALT is very serviceable to horses that are recovering from fever. It is useful, also, when the system is weakened by large abscesses which discharge copiously, and in almost every case depending on debility.

It appears to be easy of digestion, and very nutritious, though not so stimulating as oats. Green malt has been recommended for improving the con-

dition of horses, and giving them a smooth, glossy coat. Infusion of malt is sometimes given with advantage to sick horses; but they generally require to be drenched with it, which is a great inconvenience.

MANGANESE. A metallic oxide used principally in bleaching. It has been employed for fumigating glandered stables. (See Fumigation, and vol. iii. art. Glanders.)

MANNA.—*Manna.* A gentle laxative; but never used in the diseases of horses.

MARJORAM.—*Origanum.* Sweet marjoram is an annual plant, which is principally cultivated for culinary purposes. Wild marjoram yields an essential oil (*oleum origani*), which is much used by farriers as a remedy in strains, bruises, &c., but always mixed with other oils or spirits, such as oil of elder, camphorated spirit, &c. A strong infusion of marjoram may be employed as a vehicle for carminative or cordial medicine.

MARRUBIUM VULGARE. See Horehound.

MARSH MALLOW.—*Althœa.* This plant contains rather more mucilage than common mallows, and is, therefore, better calculated for making mucilaginous or emollient drinks, clysters, or fomentations.

The root is the best part, and, if carefully dried, may be kept a long time. These mucilaginous drinks are very useful when the bowels or bladder are inflamed or irritated by too strong physic, or

when there is any pain in the urinary passages. They should be given frequently in the course of the day, and may occasionally be made the vehicle of more active medicines. Any thing which contains mucilage in sufficient quantity may be employed for the purpose of making emollient drinks. (See Emollients.)

MARSH-TREFOIL.—*Menyanthes Trifoliata.* This perennial plant is very common in marshy situations. The leaves are excessively bitter, and excite both purging and vomiting. They are, however, not used by veterinarians.

MARUM TEUCRIUM *vel* SYRIACUM. Syrian Herb Mastich. This plant, when dry, is extremely stimulating, and excites violent sneezing when applied to the membrane of the nostrils; for which purpose it is employed by medical practitioners, and may be applied to a similar purpose in veterinary practice.

MASHES. A kind of medicated diet, and generally composed either of bran or malt. Bran mashes are made by pouring boiling water on fresh sweet bran, in a pail, so that the mixture, when stirred, may be about the consistence of a soft poultice: it is then to be covered over, and not given to the horse until sufficiently cold. When it is thought necessary to steam the head, as it is termed, that is, for the horse to inhale the vapour as it arises, the mash is put into the manger while hot; and some even put it into a nose-bag and secure it to the head, which is a bad practice, as it impedes respi-

ration. *Steaming the head* is recommended in strangles, colds, and sore-throats.

Bran Mashes form a very proper diet in fever, and all inflammatory complaints; they are useful, also, as a preparative to physic, serving to remove any indurated fœces there may be in the bowels, whereby the operation of the medicine is rendered more safe and effectual. Mashes are a necessary diet, also, while the physic is operating. In making malt mashes the water should be below the boiling point, otherwise the malt will clot and be spoiled. These are given for the purpose of recruiting strength, when a horse is debilitated from fever or any other cause. (See Malt and Restoratives.) When a horse has been fed high for some time with oats and beans, a change to a diet of bran mashes for two or three days will often do a great deal of good. The bran should be fresh and perfectly free from any unpleasant or musty smell. There is a finer kind of bran, named gurgings or pollard, which, though much more nutritious, is not so fit for medicinal purposes.

MASSICOT. A yellow oxide or calx of lead.

MASTICATORIES. See Chewing Balls.

MASTICH.—*Mastiche.* A resin, used chiefly in the composition of varnishes.

MEADOW SAFFRON.—*Colchicum Autumnale.* This is an indigenous perennial plant, generally found growing in rich meadows, and flowering in September. The root is a powerful diuretic in the human system, but its effect on the horse is not

known. An account was published in the New Monthly Magazine some time since, of seven yearling cattle having been poisoned by eating meadow saffron.

MEASURES.—*Mensuræ.* See Introduction.

MECHOACAN.—*Mechoacanha.* The *root* was employed as a purgative before *jalap* was known. It is much weaker than jalap; nor does it possess a single quality which can recommend it as a horse medicine.

MEL. See Honey.

MELALEUCA. See Cajeput Oil.

MELILOT. This plant was sometimes employed in the composition of glysters, and a plaster, but is now seldom applied to any medical purpose.

MELISSA. See Balm.

MENTHA PIPERITA. Peppermint. See Mint.

MENTHA PULEGIUM. Pennyroyal. See Mint.

MENTHA VIRIDIS. Spearmint. See Mint.

MERCURIALS. Preparations of quicksilver or mercury.

MERCURIAL OINTMENT.—*Unguentum Hydrargyri.* This is made by rubbing together, in a mortar, quicksilver and hog's lard, in various proportions, according to the strength required, until the former disappear, and the mixture assume a dark blue or lead colour.

In the strongest mercurial ointment of the shops there are equal parts of quicksilver and lard: these are the best proportions in which it can be made,

as it is easily rendered weaker afterwards, by the addition of lard. In medical practice this ointment is employed chiefly for the purpose of introducing the quicksilver into the system, which is done by rubbing it for some time on the skin; but in the horse, considerable difficulty and inconvenience attend this operation, though it may be made to affect the system. Thus, if we wish to introduce mercury into the circulation, it is better to give some preparation internally.

Mercurial ointment, however, is often employed in veterinary practice, as an application to callous swellings, or enlarged joints: it is often mixed with camphor in those cases, and is certainly much more efficacious when converted into a blister by the addition of cantharides or Spanish flies, or euphorbium. In this state it is a good remedy for bog spavin, or other swellings of the hock joint.

Mercurial ointment is said to be an effectual remedy for the *scab* in sheep, and is often an ingredient in ointments for the *mange*. In making mercurial ointment the operation is considerably expedited by using a small quantity of old suet, tallow that is rancid, or Venice turpentine.

Persons unacquainted with pharmacy commonly prefer mercurial ointment that has been recently prepared. It is said, however, that old and rather rancid ointment is more powerful, particularly if rubbed for some time in a mortar before it is used.

MERCURIAL PILL.—*Pilula Hydrargyri.* This is the mildest of the mercurial preparations, except

Ethiop's mineral, and the preparation named "Mercury with chalk." It is made by rubbing two ounces of quicksilver in a mortar, with three ounces of conserve of roses, until the quicksilver is quite extinguished; to accomplish which perfectly requires their being rubbed together many hours. When sufficiently rubbed, add one ounce of liquorice powder, and beat the whole into a mass. The dose from one to three or four drams daily, until some effect is produced; but when sickness or loss of appetite require it, it should be discontinued a short time. This, or Ethiop's mineral, is the mercurial preparation I would recommend for glanders and farcy. M. Volpi, however, an eminent Italian veterinary professor (Professeur de Clinique à l'Ecole Royale Vétérinaire de Milan), prefers the Ethiop's mineral, or black sulphuret of mercury, assisting its effect upon the constitution by syringing the cavities of the nose with lime water. He considers the glanders to be curable by these means, if taken early, and has adduced the most clear and unquestionable proofs of its being contagious. Among other circumstances, he relates the following:—"About a month before I revised what I had written on the glanders, it was found necessary to destroy nearly all the horses at a depôt of Italian cavalry, consisting chiefly of remount horses (recruits). This serious loss was occasioned entirely by the negligence of the person who had the care of them, and who did not believe that the glanders is contagious, and therefore did not separate such as were affected with

the disease, from the rest." M. Volpi gives half an ounce of Ethiop's mineral every day until it causes a salivation, or loss of appetite or sickness. He then gives some lime water for a few days, but resumes the use of Ethiop's mineral as soon as the salivation or sickness goes off.

MERCURY—*Hydrargyrum*. Quicksilver is commonly distinguished by this name; the various preparations of which will be described in their proper places. (See Calomel, Sublimate, Cinnabar, Ethiop's Mineral, Precipitate, White and Red Oxide of Mercury, Mercurial Ointment, &c.)

Mercury or quicksilver is found in Spain, Germany, Hungary, Siberia, the Philippines, China, and Peru. The most productive mines are those of Istria, Carinthia, and the Palatinate. It is found either in a metallic state, or combined with silver or sulphur; with the latter it forms native cinnabar. It is found also combined with chlorine and a portion of sulphuric acid, and is then named corneous mercury. It is separated from these combinations by distilling it with quicklime. In its metallic state mercury exerts no action on the animal system; it has, nevertheless, been exhibited in doses of a pound in the human subject, with a view of operating mechanically in the removal of obstructions in the intestines; but as it cannot, by its gravity, act on the ascending part of the bowels, it is not easy to conceive how it should ever have been recommended; and the events of the cases, in which it has been given, have sufficiently proved the futility of the

practice. I once gave half a pound to a healthy dog; and, though made to stand upright on his hind legs for ten minutes after, and then shut up in a large tub for several hours, no part of the quicksilver was discharged; he then ran away, and we heard nothing more of him. When mercury is prepared for medicinal use, it is a remedy of the most extensive application; it is a powerful and general stimulant; it enters into the circulation, quickens the motion of the blood, and excites powerfully the whole glandular system, increasing all the secretions and excretions. Though much mischief may have arisen from the imprudent use of the different preparations of this useful metal, yet, in the hands of judicious and cautious practitioners, they may be considered as among the most useful articles of the Materia Medica.

The following are the preparations commonly employed:—

Mercurial ointment. Mercurial pill. Ointment of nitrate of mercury, or citrine ointment. Mercury with chalk. Red oxide of mercury, or calcined mercury, yellow sub-sulphate of mercury, or turbeth mineral. Nitric oxide of mercury, or red precipitate. Sub-muriate of mercury or calomel. Oxymuriate of mercury or corrosive sublimate. Red sulphuret of mercury or cinnabar. White precipitate of mercury or white precipitate. Mercury with sulphur or Ethiop's mineral. Each of these preparations will be noticed under its respective name.

MEZEREON; the Bark.—*Mezerei Cortex.*

Mezereon is found in a wild state in England and the north of Europe. The bark of the root is much used in medicine, in venereal and rheumatic complaints, but is not calculated for veterinary purposes.

MILLEPEDÆ, or HOG'S LICE. These insects are found in cold, damp situations, as under stones, in cellars, &c. They were formerly employed by medical practitioners as a diuretic, but are now quite disregarded.

MINDERERUS'S SPIRIT.—*Spiritus Mindereri.* (See Acetate of Ammonia.) The dose is from six to eight ounces, diluted.

MINERAL WATERS are too weak for veterinary purposes. It has been remarked by experienced persons, that waters impregnated with saline bodies, which are commonly said to be *brackish*, are generally injurious to horses; and I have observed that horses seldom do well on the coast, where the greater part of the water is in this state. This may arise from their not drinking a sufficient quantity for the purposes of digestion, on account of its disagreeable taste; for they often receive much benefit when at grass in such situations. It has been generally remarked that cavalry regiments, stationed on the coast, are more liable to disease than others, especially to rough, unhealthy-looking coats, hide-bound and cutaneous diseases. This, however, is as likely, and perhaps more likely to arise from a damp, cold atmosphere, and bad stables, than from drinking brackish water. M. Collaine, Veterinary Professor at Milan, has observed, that

cavalry corps, after being some months near the sea, have been afterwards much affected with farcy. (*Compte rendu, &c. d'une Expérience tentée, et des Succés obtenus, contre la Morve et le Farcin, par M. Collaine, Professeur à l'Ecole Royale Vétérinaire de Milan.*)

MINIUM *vel* OXYDUM PLUMBI RUBRUM. Red Oxide of Lead. Red Lead. See Lead.

MINT.—*Mentha.* This is a valuable herb, and grows here very abundantly. There are two kinds used in medicine, viz. Spearmint (*Mentha Viridis*), and Peppermint (*Mentha Piperita*). The former is an excellent carminative, and generally affords relief in flatulence of the stomach and bowels, and that complaint which arises from it, termed gripes, fret, or flatulent colic.

Peppermint, however, is considerably stronger, and, I think, more certain in its effect. All the virtues of mint reside in an oil which it affords plentifully by distillation ; and this is the most convenient form in which it can be employed for veterinary purposes ; but it requires to be highly diluted with water, with which it mixes very readily, if previously dissolved in a small proportion of rectified spirit, or rubbed in a mortar with mucilage and sugar. (See Essence.)

The dose of oil of peppermint is from twenty drops to half a dram ; of spearmint from forty drops to one dram.

This is generally found a sufficient quantity, but but it may be increased if it prove ineffectual.

It is necessary to distinguish carefully between those pains of the stomach and bowels which arise from inflammation, and such as are caused by spasm or flatulence. In the former, mint is very pernicious, in the latter, an excellent remedy. (See vol. i.; see also Carminatives.)

A solution of oil of peppermint, in rectified spirit, is sold under the name of Essence of Peppermint; one part of the oil to three of spirit is the strength of which I prescribe it. A strong infusion of the dried herb is a good vehicle for more active medicine, and with a glass or two of gin may be given for flatulent colic or gripes, when other medicine cannot be procured.

MITHRIDATE. The name of an elaborate and absurd preparation, of which *opium* was the principal ingredient. The London College have substituted for it a much neater and more efficacious formula, termed *Opiate Confection*, which is thus made:—

Powdered opium	6 dr.
Long pepper	1 oz.
Ginger	2 oz.
Caraway seeds	3 oz.
Syrup	1 pint.—Mix.

The following is the receipt for MITHRIDATE, *or* CONFECTION OF DEMOCRITES.

Cinnamon 24 drams; Indian spikenard, ginger, saffron, shepherd's-purse seed, frankincense, Chian turpentine, of each 10 drams; Zedoary mace, long

pepper, juice of hypocistus, storax, opoponax, galbanum, opobalsam, and castor, of each 1 ounce; scordium, cubebs, white pepper, carrot-seed, bdellium, of each 7 drams; celtic nard, gentian, dittany of crete, red roses, wild parsley-seed, cardamoms, sweet fennel-seeds, gum arabic, strained opium, dissolved in wine, of each 5 drams; aromatic reed, valerian root, sagapenum, anise-seeds, of each 3 drams; catechu, St. John's-wort, skinks, of each 2 ounces and a half.

All these are to be dried and powdered, and made into an electuary, with three times its weight of honey. *Theriaca Andromachi*, or Venice treacle, is nearly similar. These preparations are a curious contrast to the simplicity of modern preparations. (See Opiate Confection.) In the elaborate work lately published at Paris, named *Codex Medicamentarii*, they have retained a preparation of this kind, under the name of *Electuarium Opiatum Polypharmacum*, and have arranged the seventy-two ingredients of which it is composed under thirteen heads; viz. of acrid ingredients 5 species; bitter 8; styptic or astringent 5; exotic aromatics 14; indigenous aromatics 10; aromatics from umbelliferous plants 7; resins and balsams 8; fœtid gums 6; narcotics 1 (see Opium); earths 1; gums and mucilages 4; saccharine 2, viz. liquorice and honey; spirituous 1, viz. Spanish wine.

MOLASSES. See Saccharum.

MOMORDICA ELATERIUM. See Elaterium.

MONKSHOOD. See Aconitum.

MOSAIC GOLD. A combination of tin and sulphur, of a metallic appearance, though soft, and of a golden colour: it is not used in medicine.

MOSCHUS. See Musk.

MOXA. A light fibrous substance, somewhat like very fine tow. In eastern countries it is employed to remove deep-seated pains, being set on fire on the affected part so as to burn and produce an eschar: it is therefore nothing more than the actual cautery, which is much more conveniently applied in veterinary practice by means of the hot iron. (See Firing.)

MUCILAGE.—*Mucilago.* The mucilage commonly employed is made by dissolving gum arabic in water. There are other cheaper gums, however, that will answer the same purpose; mucilage may be made also from quince seeds and starch. For internal use it is most cheaply and abundantly obtained from flax seed (mixed, however, with oil), or as it is more commonly named linseed. Eight ounces infused in two or three quarts of boiling water form a good mucilage. (See Acacia Vera.)

MURIATES. Combinations of muriatic acid, with alkalies, earths, or metals.

MURIATE OF AMMONIA.—*Ammoniæ Murias.* This is commonly named crude sal ammoniac, and when dissolved in vinegar has been found a useful application. I have employed the following formula for splents when in a state of inflammation.

Muriate of ammonia powdered .... 2 dr.
Vinegar .... 1 oz.
Alcohol .... 1 oz.
Water .... 2 oz.—Mix.

MURIATE OF ANTIMONY.—*Antimonii Murias.* Commonly named butter of antimony. A strong and useful caustic, very commonly employed by shoeing-smiths in canker of the foot, and in punctured wounds of the foot from picking up a nail, as it is termed; also in bruises of the foot. (See vols. i. and iii.)

MURIATE OF COPPER.—*Cupri Murias.* A solution of verdigris in muriatic acid or spirit of salt. This is a good mild caustic, and may be diluted occasionally with water.

MURIATE OF LIME. See Calcis Murias.

MURIATE OF MERCURY, OXY and SUB.—*Hydrargyri Oxymurias et Submurias.* Oxymuriate of mercury is more commonly known by the name of corrosive sublimate, (see Sublimate,) and submuriate of mercury by the name of calomel. (See Calomel.)

MURIATE OF SODA.—*Sodæ Murias.* Common salt, or the salt employed with food. This is an excellent laxative for cattle, and in small doses promotes digestion. Mow-burnt hay, or bad hay of any kind, is made more palatable to horses and cattle by being moistened with water in which a small quantity of salt has been dissolved, and it is perhaps rendered more easy of digestion also.

MUSK.—*Moschus.* An animal substance, ob-

tained from the musk deer, remarkable for its powerful odour. In medicine it is employed as an antispasmodic, but its extravagant price has prevented Veterinarians from giving it a trial.

MUSTARD.—*Sinapis.* Though chiefly employed for culinary purposes, mustard deserves a place in our Materia Medica, both as an internal and external medicine. When flour of mustard is made into a thin paste with water, and carefully rubbed on the skin for some time, it excites considerable inflammation and swelling. This property renders it useful in cases of internal inflammation, particularly when the bowels or lungs are affected. This paste is rendered stronger by the addition of oil of turpentine. (See Embrocations.)

Mustard may be given internally with good effect, in cases which require strong stimulants.

MUTTON SUET.—*Adeps Ovillus.* The principal use of this fat is in the formation of ointments.

MYRISTICA MOSCHATA. The Nutmeg Tree. See Nutmeg and Mace.

MYROXYLON PERUIFERUM. The Peruvian Balsam-Tree. See Balsam of Peru.

MYRRH.—*Myrrha.* This is a gum resin, produced by a tree or plant that is found principally in Arabia Felix and Abyssinia. It has a pleasant odour, and a bitter pungent taste; is much used in medical practice, as a tonic and stimulant; and may probably be employed with good effect for horses, in weakness of stomach, diminished appetite, and imperfect digestion; in such cases it may be

given with about two drams of aloes and a little soap; some ginger also may be occasionally added: it is often joined with preparations of steel or iron.

There is a *simple* and a *compound* tincture of myrrh, sold by druggists: the former is seldom used in veterinary practice, but the latter is a favourite remedy with grooms and farriers for recent wounds.

The dose of myrrh is from 1 or 2 to 3 drams.

MYRTUS PIMENTA. Pimenta or Allspice Tree. See Jamaica Pepper.

NARCOTICS. Medicines that stupefy and produce sleep; such as opium, &c.

NATRON. See Soda.

NICOTIANA. See Tobacco.

NIGHTSHADE. See Belladonna.

NITRATE OF POTASS.—*Potassæ Nitras.* Nitre or Saltpetre. A neutral salt, formed by the combination of nitrous acid and potash. This is a medicine of great utility in veterinary practice, and highly esteemed both by farriers and Veterinarians. It possesses a cooling and diuretic property, which renders it extremely useful in fevers, and all inflammatory complaints.

In fevers, it is often joined with emetic tartar, or antimonial powder, with good effect. In catarrh or cold, nitre is the best remedy; and in troublesome coughs it often gives relief, if mixed with some emollient drink and a little honey. (See Emollients.)

The medium dose of nitre is about one ounce, though farriers often give double that quantity, or

more; but in such large doses it is apt to irritate the stomach and do mischief; therefore in urgent cases half an ounce may be given every fourth hour, in which way there will be no danger of its producing that effect, particularly if it be given in a mucilaginous drink, or in water-gruel. If nitre be given in the form of a ball, it is adviseable to offer some water immediately before or after, or to wash it down with a horn-full of water-gruel.

NITRATE OF SILVER. See Argenti Nitras.

NITRIC AND NITROUS ACIDS. See Acid, Nitrous.

NUTMEG.—*Nux Moschata.* This well-known spice is a good stimulant and cordial medicine, but not preferable to many others that are much less expensive. (See Cordials.)

NUX VOMICA. A poisonous vegetable; the fruit or the seed of the Strichnos Nux Vomica. A small quantity will destroy dogs, rats, or mice. It has been given to the human subject in epilepsy and dysentery, but is now rarely used, being considered a dangerous medicine. M. Collaine, Professor of the Veterinary School at Milan, in a treatise on glanders, says, "I determined on making a final experiment on two farcied horses with the nux vomica, which I gave to the extent of two ounces a day to each of them, beginning with a dose of half a dram, morning and evening."

"The ulcers on the skin became stationary, and assumed a red healthy appearance, but about the

ninth day one of the horses was attacked with spasms nearly of the whole body, which induced me to put an end to my experiments and the sufferings of the animal by causing him to be shot. It is necessary to observe that these two horses, before they took the nux vomica, had taken the extract of *Aconite*, or Wolf's Bane (see Aconitum); which, in the dose of one ounce and a half daily, caused considerable depression and weakness without lessening the disorder (farcy), although the same medicine had, in less than ten days, removed the disease in a horse belonging to another regiment, that had the hind leg much swollen, and covered with farcy sores. This horse, however, was in consequence affected with great difficulty of breathing, which continued ten or twelve days, or until the swelling and farcy appeared again."

OAK BARK.—*Cortex Quercûs.* A decoction of oak bark is a good vehicle for tonic and astringent medicines. When finely powdered and given as a drench with ginger, it may be of service in those complaints, the continuance of which depend upon debility. It is said, however, to be much less efficacious than Peruvian Bark; yet, when that cannot be procured, it may be found an useful substitute. The dose is about two ounces.

OATS.—*Avenæ Sativæ Semina.* In the choice of oats for horses, such as are perfectly free from unpleasant or musty smell should be preferred; also, such as are heavy and clean. New oats are injurious, rather difficult of digestion, and apt to

scour; but this quality may be, in a great measure, corrected by drying them gradually on a kiln; or by giving with them a small proportion of split beans, and some clover cut into chaff: when this cannot be had, a small quantity of wheat flour may be given in the horse's water, especially if the horse already scours, and then the chill of his water should be taken off; a small cordial ball may be necessary on such occasions, if the animal has any extraordinary work to do; but under such circumstances, even moderate work might be hazardous. Nothing is more liable to produce disease in horses than being fed on musty oats, that is, oats that have been heated by being kept on board a ship, or in large heaps without being frequently turned. I have known coach and post horse proprietors suffer the most serious losses from this cause; it cannot, therefore, be too carefully guarded against, and may be useful to such persons to be informed that, when horses are required to do such work, to suffer so much fatigue, and be so exposed to the weather, as coach and post horses commonly are, they cannot be too carefully fed and attended to; their food should be so given that digestion may go on without interruption, as many horses have been destroyed by taking them out and putting them to quick work upon a full stomach. Bruising oats as well as beans for horses is a great advantage; and, upon emergencies, oatmeal, or wheat flour mixed up with a little water, will be found to afford nutriment, and vigour without incumbering the stomach. (See

Gruel. See also vol. i. article Stable Management and Flatulent Colic.) I am satisfied that all those cases of gripes or flatulent colic, which so often occur among post and coach horses, are brought on by indigestion; and what is so likely to cause indigestion as violent exercise upon a full stomach, especially when the food is of a bad quality, and the stomach in a morbid or weakened state, which is often the case with post and stage-coach horses? When there is a necessity for using new oats, and especially when any stock of such oats is to be kept, they should be dried on a kiln very gradually. They may then be much improved, and, probably, that process may be completed which had been put a stop to by removing them from the mow.

OILS.—*Olea.* Oils are either *fixed* or *volatile.* The former are procured from various animal and vegetable substances, generally by means of pressure and heat, from which circumstance they have also been named *expressed oils;* and are termed fixed, because they do not evaporate, except at a very high temperature, when they are decomposed. *Volatile oils*, on the contrary, evaporate very readily, and are generally obtained from vegetables by distillation; and as they commonly contain all the essential qualities of the substance they are procured from, have also been named *essential oils.* The various oils are noticed under the name of the substance from which they are obtained.

The numerous officinal oils, directed in the old dispensatories, are still highly esteemed by farriers;

among which are, Oil of Swallows, Earthworms, John's-wort, Spike, Petre, &c.; and we frequently meet with receipts for "strain or bruise oils," in which more than a dozen different oils are ordered! Perhaps it may be an acceptable piece of information to those who place any confidence in these oils, that only three kinds are kept in the shops, from which this great variety is furnished; which are, oil of elder, oil of turpentine, and Barbadoes tar. Oil of spike is made by colouring oil of turpentine with alkanet root: oil of petre, by dissolving Barbadoes tar in the same oil: for all the other kinds, oil of elder is sold; and this is often made by colouring common oil with verdigris.

Oil of Almonds.—*Oleum Amygdalæ.* A very sweet and pure oil, obtained either from sweet or bitter almonds, by expression.

Oil of Bay.—*Oleum Lauri Nobilis.* This is more like an ointment than an oil, is of a light green colour, and smells like bay berries, from which it is procured. It is used chiefly as an external application in cutaneous complaints, such as the mange. Oil of bay is sometimes substituted for hog's lard in making mercurial ointment, and is supposed to render it more active. When to this mixture are added cantharides and oil of origanum, a strong blister is formed, which is recommended for the removal of splents and spavins. (See Blisters.)

Oil of Cajeput.—*Oleum Cajeputæ.* See Cajeput Oil.

Oil of Caraways.—*Oleum Carui.* See Caraway.

Oil of Castor.—*Oleum Ricini.* An useful laxative.

The dose is about a pint. (See Castor Oil.)

Oil of Elder.—*Oleum Sambuci.* See Elder.

Oil of Juniper.—*Oleum Juniperi.* See Juniper.

Oil of Linseed.—*Oleum Lini.* This also has a laxative quality, but is not so certain in its effect as the castor or olive oil. It is employed as a remedy for coughs; and on such occasions the *cold-drawn oil* is preferred, *i. e.* that which is expressed from the seed without the assistance of heat.

Oil of Olives.—*Oleum Olivæ.* This also is a very pure and sweet oil; and in the dose of a pint generally operates as a laxative. When castor oil cannot be easily procured, this may with great propriety be substituted for it. It is used also in making emulsions, liniments, and ointments.

Oil of Palm, or Palm Oil.—*Oleum Palmæ; Oleum Coci Butyraceæ.* This, though termed an oil, is of the consistence of hog's lard, and very similar to it in its medical qualities. It is of a yellow colour, and has rather an agreeable smell. It is prepared from the fruit of the Cocos Butyracea, or Mackaw tree, a native of South America. The fruit is of a triangular shape, yellow and as large as a plumb, and its kernel yields the substance known by the name of Palm Oil. It is frequently imitated by axunge coloured with turmeric, and scented with Florentine Iris root.

Oil of Turpentine.—*Oleum Terebinthinæ.* See Turpentine.

Oil of Vitriol.—*Acidum Sulphuricum.* See Acid, Sulphuric.

OINTMENTS.—*Unguenta.* External applications composed generally of lard, suet, tallow, bees' wax, oils, resins, and turpentines. The following are those most frequently wanted and commonly kept ready prepared:

SIMPLE OINTMENT.

Olive oil	1 lb.
Bees' wax	3 oz.
Palm oil	2 oz.

Melt over a slow fire, and continue stirring until cold.

For common purposes hog's lard makes a good simple ointment, but is apt to become rancid by keeping. The simple ointment may be readily converted into a detergent, a digestive, or an astringent, by the addition of red precipitate, verdigris, or blue vitriol finely powdered, finely powdered alum, superacetate of lead (*sugar of lead*), or a solution of subacetate of lead (*Goulard's extract of lead*). The following is a very useful ointment for chopped heels, harness galls, &c.

GOULARD OINTMENT.

Simple ointment	1 lb.
Solution of sub-acetate of lead, commonly called Goulard's extract (by measure)	3 oz.
Olive oil	1 oz.

Melt the ointment by a very gentle heat, and when melted add the oil, then let it be removed from the fire, and stir in the Goulard's extract; continue stirring until cold.

SULPHURIC OINTMENT.

Oil of turpentine	6 oz.
Sulphuric acid (by measure) ..	2 oz.

Mix cautiously in the open air, or in a chimney, in a vessel large enough to hold one pound and a half; stir the mixture, and, when perfectly combined, add one pound and a half of hog's lard: continue stirring until cold. By the addition of cantharides, this ointment forms a strong blister, and with *sulphur vivum* finely powdered, or flower of sulphur and train oil, it becomes a good mange ointment.

DIGESTIVE OINTMENT.

Hog's lard .... 1 lb.
Common turpentine .. 1 lb.—Melt and add
Verdigris .... 2 oz.

Continue stirring until cold.

HOOF OINTMENT.

Tallow	1 lb.
Tar	1 lb.

Melt, continue stirring until cold.

In concluding this article, it is right to observe, that ointments are not so commonly applied to

wounds or inflamed parts, as they were formerly; and that powders, lotions, or washes, and fomentations are often found more efficacious. (See Astringents, Digestives, Detergents, Escharotics, Caustics, Emollients, Blisters, &c.)

OLEA. See Oils.

OLEA EUROPÆA. The Olive Tree. This is principally cultivated for its fruit and the oil expressed from it. (See Olive Oil.)

OLIBANUM.—*Olibanum.* A gum-resin, generally supposed to be obtained from the Juniperus Lycia; but this has been disputed. It is a brittle, transparent substance, of a pale yellowish colour, and its properties are stimulant and diaphoretic, but, although sometimes used by surgeons for these purposes, it is rarely employed by veterinary practitioners.

ONION.—*Allium Cepa.* Onions possess a diuretic power, but are seldom given to horses.

OPIATE CONFECTION.—*Confectio Opii.* This is made in the following manner:

Take of	Hard opium powdered	6 dr.
	Long pepper	1 oz.
	Root of ginger	2 oz.
	Caraway seeds	3 oz.
	Syrup	1 pint.

Heat the syrup and then rub the opium with it; afterwards add the remaining articles, previously pulverized, and mix the whole together.

One ounce of the confection does not contain more than fourteen or fifteen grains of opium; it

may therefore be given in doses from one to two ounces, though in this quantity it would be a powerful stimulant.

In veterinary medicine the following electuary may be advantageously substituted for the opiate confection of the London Dispensatory.

OPIATE CONFECTION, OR ELECTUARY OF OPIUM.

Opium	$1\frac{1}{2}$ oz.

Macerate in hot water until it forms with it a thin paste, or until, by stirring, it is uniformly mixed, and free from lumps.

Powdered ginger	3 oz.
Powdered caraway seeds	6 oz.
Powdered allspice	6 oz.
Treacle	$1\frac{1}{2}$ lb.

Let these ingredients be well mixed, and kept in a closed jar or pot. The dose is about one-twentieth part of the mass. It is a warm cordial and diaphoretic, and may be given in flatulent colic mixed with a little warm beer, or infusion of peppermint, or other aromatic herbs. This electuary is a good cordial for cattle.

OPIUM. The inspissated juice of the White Poppy.

This is one of the most important articles of the Materia Medica.

It is classed among the narcotic sedatives, of which it is undoubtedly the most useful.

The anodyne quality which renders opium so valuable in human medicine is not so manifest when given to the horse.

If injudiciously given, opium frequently aggravates disease, and does much injury: and I have several times seen it increase pain, when it has been improperly given as an anodyne. In flatulency or spasm of the bowels it is an excellent remedy, particularly if joined with aromatic powder, ginger, or some other stimulant. In diarrhœa it is an effectual remedy, but must be given cautiously. In diabetes I have found it very beneficial, when joined with bark and ginger. Sometimes it is given with emetic tartar, and some cordial composition, with good effect, and in this way it proves a good diaphoretic. (See Opiate Confection.)

I have given opium and squill, in obstinate coughs, with success; but the effect is not permanent. (See vol. i.)

Opium is very apt to produce costiveness in horses; but this tendency may be in a great measure counteracted by exercise; when it does take place, it may be removed by clysters, bran mashes, or a laxative ball.

The medium dose of opium is half a dram, or two scruples; but if given in the form of clysters, which it sometimes is with the best effect, two drams will not be too much. (See Clysters.)

In human medicine opium is frequently used in the form of a tincture; and in veterinary practice it is the most convenient form.

Opium is brought to this country in chests from Turkey and India. The Turkey opium is in flat pieces, covered with leaves and the reddish capsules of some species of dock, which is considered an indication of its goodness, as the inferior kinds of opium have none of these capsules adhering to them. Turkey opium generally contains about one-fourth part of impurities. Indian opium is less pure; is in round masses, covered with leaves to the thickness nearly of one-fourth of an inch. Mr. Kerr relates that, at Bahar, it is frequently adulterated with cow-dung, the extract of the poppy procured by boiling, and various other substances. It is made also from lettuces in India.

In Malava it is mixed with oil of sesamum, which is often one-half of the mass; ashes, and the dried leaves of the plant, are also used. Opium is regarded as bad when it is either very soft or friable, of an intensely black colour, or mixed with many impurities. In the human body opium is sometimes employed externally, and is said to be almost as efficacious as when taken into the stomach, producing its narcotic effects without affecting the head, or causing nausea; but in the horse it is not likely to be useful in this way. Of late years I have generally used opium in the form of a spirituous tincture, as kept in the shops, in preference to the watery solution or mixture; there may be cases, however, in which the spirit may be improper, and then the watery mixture should be preferred. Opium is said to be decomposed by solutions of oxymuriate of mer-

cury, acetate of lead, sulphate of zinc, iron, and copper, and such combinations should therefore be avoided. The same objection has been applied to combinations of opium with the carbonates of potash and soda, lime water, infusion of bark, and infusion of galls; but, in combination with vinegar, the vegetable acids, and oil, its strength or narcotic power is said to be much increased That celebrated preparation of opium, named the *black drop*, is an example of this. The following is the formula for making it, according to Thomson.

BLACK DROP.

Opium sliced	½ pound.
Good verjuice	3 pints.
Nutmegs	1½ oz.
Saffron..............	½ oz.

Boil them to a proper thickness, then add a quarter of a pound of sugar and two spoonfuls of yeast. Set the whole in a warm place near the fire for six or eight weeks, then place it in the open air until it becomes a syrup; lastly, decant, filtre, and bottle it up, adding a little sugar to each bottle. One drop of this is said to be equal to three drops of the tincture of opium. Opium is often combined with emetic tartar and ipecacuanha in human medicine, in which state it acts as a sudorific as well as anodyne; this combination is employed also in veterinary medicine, but is not so decidedly useful as in the former. The diseases of the horse, in which opium is most beneficial, are locked-jaw and flatulent

colic; in the former it has been given in large doses, with the best effect, generally joined with camphor, and sometimes with assafœtida and other antispasmodics. In flatulent colic smaller doses have been found sufficient, which have generally been joined with sweet spirit of nitre, and other carminatives. (See vol. i. 13th edit. See also Opiate Confection, remarks on.) The medium dose of the tincture, prepared according to the London Dispensatory, is one ounce, and of solid opium, *purified*, half a dram. Half an ounce of purified opium, according to Boardman, was given to a horse at one dose; he slept through the day-time for eight or nine hours, and could not be easily roused. In locked jaw, the same author prescribes three drams of purified opium every three or four hours, with camphor and salt of hartshorn, of each half an ounce. But Mr. Wilkinson, who has succeeded in twenty-four cases of locked-jaw, gave only one dram of common opium, with the same quantity of camphor and assafœtida: but he gradually increased the dose, and went, in some cases, so far as two or three drams. The mode of purifying opium, prescribed in the London Dispensatory, is to dissolve it in proof spirit, then filtre the solution, and evaporate in a water bath to the required consistence; but a more ready way, though not so effectual, is to dry it carefully by a moderate heat, powder and sift it. The sieve will keep back many of the impurities, when this is carefully done. Opium is an article of so much importance, that it appeared necessary to notice it particularly, and at

some length. There is a vinous tincture of opium sometimes used in diseases of the human eye. I have found nearly a similar preparation very useful in chronic inflammation of the horse's eye, applied undiluted. (See vol. i.) It is made by digesting or dissolving two ounces of opium in a pint of sherry wine, or any good *old* white wine.

OPODELDOC.—*Linimentum Saponis Compositum.* This is made by digesting three ounces of soap in a pint of spirit of rosemary until it be dissolved, and then adding one ounce of camphor. It is either liquid or solid. The former, when made with soft soap, the latter, when with hard soap. In the solid state it seems to be the same as the celebrated *Steer's Opodeldoc.* (See art. Embrocations and Liniments.)

It is employed for strains and bruises, after the inflammation, which always accompanies those complaints at first, has subsided. (See vol. i.)

LIQUID OPODELDOC, OR SOAP LINIMENT.

Soft soap	4 oz.
Water	8 oz.

Mix, and add to the mixture one pint of rectified spirit of wine, in which there has been previously dissolved

Camphor	2 oz.
Oil of rosemary	1 oz.

STEER'S OPODELDOC.

Hard soap	½ oz.
Rectified spirit of wine	8 oz.

Camphor .... ½ oz.
Oil of rosemary .... 2 dr.
Oil of lavender, or oil of origanum 2 dr.
Compound spirit of ammonia .. 4 oz.

Digest in a moderate heat, so as to dissolve the soap, which should be cut up in thin shavings. These preparations are expensive; therefore the following may be substituted for them:—

VETERINARY OPODELDOC.

Soft soap .... 4 oz.
Water .... 8 oz.
Mix over the fire; when cold add
Rectified spirit .... 1 pint.
Oil of rosemary .... 2 oz.
Strong liquid ammonia .... 4 oz.—Mix.
(See Embrocations and Liniments.)

OPOPONAX; GUMMI RESINA. Opoponax. The Gum Resin. This is obtained from a species of parsnip, which is a native of the south of Europe. Incisions being made in the root, a milky juice exudes, which, when dried in the sun, forms the opoponax of the shops. It nearly resembles galbanum in its medical qualities, though so much inferior that it does not merit any notice as a veterinary medicine.

ORIGANUM. Marjoram. The essential oil of wild marjoram is much used by farriers, as an ingredient in their strain oils, or mixtures for bruises. It is a very powerful stimulant, and capable of doing much harm in those complaints: it is some-

times mixed with mercurial ointment, oil of bay, and cantharides, to form strong blisters. (See Blisters.)

ORPIMENT. This is a combination of arsenic with sulphur and iron. (See Arsenic.) In 'Markham's Master-piece,' and some other old books on farriery, the nostrils of glandered horses are directed to be fumigated with yellow arsenic made into pastils or cakes, with frankincense and elecampane: some apparent cures are said to have been effected in this way, but probably the running was only suspended a short time; and we know enough of the disease to be satisfied that the cases, supposed to have been thus cured, either were not really the glanders, or that it was only a temporary removal or stoppage of the discharge from the nostrils. The fumigation of the nostrils with yellow arsenic is not only ineffectual in glanders, but likely to prove injurious both to the patient and the operator. Yellow arsenic, made into an ointment with lard, has been recommended for warts, but it is a very dangerous application; and besides, warts can always be effectually and safely removed by the knife from any part of the body.

There is a secret method of curing fistula, poll-evil, and quittor, employed by certain farriers, which often cures, and often does much injury. Their remedy is orpiment mixed with lard. The cures they make are always made known, but the mischief they do escapes notice, or is concealed. Lunar caustic, or blue vitriol, and the knife, will accom-

plish, with safety and certainty, all that can be accomplished in those diseases.

Poll-evil is caused by blows on the head, or by mange, which makes the horse rub his head, and often hurt it by blows against the manger, by which the first bone of the neck becomes diseased. The cure, therefore, requires time.

OYSTER-SHELLS.—*Carbonas Calcis Præparatus*. These, when prepared by being burnt and levigated, may be used as absorbents. (See Absorbents.)

OXIDES. Any simple substance, in combination with a smaller quantity of oxygen than is requisite to form an acid, is termed an oxide.

Oxide of Zinc.—*Oxydum Zinci*. See Flowers of Zinc.

OXYGEN. A constituent part of atmospheric air, without which it would be unfit for respiration. In breathing, the air is rendered impure by the exhalations from the lungs, and, at the same time, we deprive it of this pure and vital principle: it is, therefore, unfit for the purpose a second time: and if an animal be confined in air deprived of its oxygen, life is almost instantly extinguished. Hence may be inferred the necessity of ventilating stables; for although in close stables the air is not wholly deprived of oxygen gas, yet its proportion is diminished; and it is well known, that when there is a deficiency of this animating principle, the system is debilitated, and all its functions imperfectly employed.

OXYMELS. Syrups, when made with honey and vinegar only, are termed *simple oxymels;* when squill, garlic, or meadow saffron, has been previously infused or digested in the vinegar, it is named oxymel of squill, of garlic, or of meadow saffron. They are sometimes employed in chronic cough. The dose about four ounces mixed with water, or infusion of linseed, or marsh-mallows. (See Expectorants, and vol. i. art. Chronic Cough, in the 13th edition.)

OXYMURIATE OF POTASH. — *Potassæ Oxymurias.* An expensive preparation not used in veterinary practice; it has been employed, however, in human medicine, in syphilitic cases, and scurvy; and now seems to have fallen into disrepute. How far it may be worth a trial on horses is uncertain, but the expense is an important objection to its use.

OXYMURIATE OF QUICKSILVER. — *Hydrargyri Oxymurias.* See Corrosive Sublimate.

PALM OIL. (See Oil of Palm.) A yellow or orange-coloured unctuous substance, of the consistence of butter, and of a pleasant odour. An imitation of it is sometimes sold, made with hog's lard, turmeric, and orrice powder. It is used as an emollient ointment, and probably is not preferable to lard.

PANAX QUINQUEFOLIA. Ginseng; which see.

PAPAVER ALBUM. The White Poppy. See Opium.

PAREGORIC ELIXIR, or CAMPHORATED TINCTURE OF OPIUM. — *Elixir*

Paregoricum, sive Tinctura Opii Camphorata. This is made in the following manner :—

Take of

Hard purified opium	each 1 dr.
Flowers of Benzoin	
Camphor	2 scr.
Essential oil of aniseed	1 dr.
Proof spirit of wine	2 pints.

Digest for ten days (seven days, Dub.), and then strain. Half an ounce, by measure, contains about a grain of opium. Although very serviceable in human medicine to allay coughing, this preparation is not fit for veterinary purposes.

PARSLEY.—*Petroselinum.* The root diuretic: the seeds a weak carminative.

PARSLEY, MACEDONIAN : nearly the same, rather stronger.

PEARL ASHES. — *Carbonas Potassæ Impurus.* Carbonate of potash in an impure state. (See Potash.)

PEARL BARLEY. Barley deprived of its cuticle or shell. (See Gruel.)

PEAS are sometimes used as food for horses, but beans are generally preferred. Pea-meal is employed to adulterate horse powders, particularly liquorice-powder, anise-seed, fenugreek, &c.

PECTORALS. Medicines that relieve cough, and disorders of the lungs. (See Expectorants, Emollients, Emulsions, and Demulcents.)

PELLITORY OF SPAIN.—*Pyrethrum.* This plant is a native of the Levant, Barbary, and the

south of Europe, and is also cultivated in this country. The dried root is the only part employed in medicine. This is used chiefly to relieve the tooth-ache, and pain about the jaws; which it does by causing a copious discharge of saliva, when kept in the mouth a short time. It is not necessary in veterinary practice, but is included in Gibson's Farrier's Dispensatory, and was probably sometimes used by him in the composition of masticatories. (See Chewing Ball, Veterinary Dictionary.)

PENNYROYAL.—*Mentha Pulegium*. The essential oil of this herb possesses a carminative power, but is very inferior to that of peppermint. A strong infusion may be employed as a vehicle for carminative medicine.

PEPPER, BLACK.—*Piper Nigrum*. This is often used by farriers in the colic, but is by no means an eligible remedy, and is often given very improperly. I once knew a farrier give two ounces, in half a pint of Daffy's Elixir, to a mail-horse that was said to be attacked with gripes: he gave me the following explanation of the manner in which it was to act:—"*The pepper is to break the wind, and the Daffy's Elixir is to drive it out.*" In the evening the horse died. I mention this circumstance as a caution to those who are too fond of giving these very hot remedies in pains of the bowels, without inquiring into the nature of the complaint. (See vol. i., in which are plain directions for distinguishing between flatulent and inflammatory colic. See also Carminatives.)

PEPPER, CAYENNE; the Berries. *Capsicum; Baccæ.* See Capsicum.

PEPPER, CUBEBS.—*Cubeba.* See Cubebs.

PEPPER, LONG.—*Piper Longum.* This is much stronger than black pepper, and may be used for the same purposes.

PEPPER, JAMAICA. — *Pimentæ Baccæ; vulgó, Piper Jamaicense.* See Jamaica Pepper, or Allspice.

PEPPERMINT. — *Mentha Piperita.* See Mint.

PERIWINKLE, Major and Minor. According to Bourgelat, these are employed in sore throat or quinsy, in decoction mixed with honey and vinegar. M. Malouin formerly asserted that the greater periwinkle, powdered and mixed with Ethiop's Mineral, was a specific against glanders. (See Ethiop's Mineral.) In hot climates the plants of this genus are said to acquire poisonous qualities.

PERUVIAN BALSAM.—*Balsamum Peruvianum.* See *Myroxilon Peruiferum* and Balsam of Peru.

PERUVIAN BARK.—*Cinchona.* See Bark.

PETROLEUM BARBADENSE. See Barbadoes Tar.

PEWTER. A composition of lead and tin, in the proportion of about eighty parts of the former to twenty of the latter in every hundred. I have been informed that scrapings or filings of pewter are a good anthelmintic for dogs. The dose, as much as will lay on a shilling, or about a dram. It is as-

serted that a man has taken a dram, for two successive days, without suffering the least inconvenience. (See *Gray's Supplement to the Pharmacopœias.*)

PHOSPHATE OF SODA.—*Sodæ Phosphas.* This is similar in its effects to sulphate of soda or Glauber's salts.

PHOSPHORUS. A very combustible substance, made either from bones or urine. Experiments have been made at the Veterinary College to ascertain its medical qualities: it proved to be a dreadful poison, inflaming the stomach in small doses.

PHYSIC. See Cathartics.

PIMENTO. See Allspice and Jamaica Pepper.

PINK ROOT.—*Spigeliæ Radix.* This is a perennial plant, and grows wild in some parts of North America. It is termed Carolina Pink, or Worm-grass root; but, although a powerful anthelmintic in the human body, is not employed for veterinary purposes.

PITCH.—*Pix.* A black and impure resinous substance, obtained by boiling or distilling tar to the desired consistence, and used by farriers in making *charges.* (See Burgundy Pitch.)

PLAISTER, or PLASTER.—*Emplastrum.* A composition of wax, resin, &c., or of oil boiled with the oxide of lead or litharge. (See Diachylon and Charge.)

PLAISTER, ADHESIVE.—*Emplastrum Adhæsivum.* This is made with diachylon and a small proportion of resin, and still less of common turpentine, or with diachylon and galbanum. Sticking-

plaister is sometimes employed to keep the edges of a fresh wound together; but in horses this is generally done more effectually by suture, that is, by sewing up the wound. (See vol. i.)

POISONS. These are noticed in a Materia Medica for the purpose of showing the means we are acquainted with of counteracting their baneful effects. Poisons are of three kinds, viz. mineral, vegetable, and animal. Of the first kind are arsenic, corrosive sublimate, and certain preparations of lead. The best antidotes to arsenic are oily and mucilaginous liquids, sulphate of potash, soap, and castor oil in a solution of sulphate of magnesia. The same means may be employed to counteract the effects of sublimate. When there is much purging, give linseed tea, tripe liquor, or thin gruel, or gruel made of arrow-root. Such immense doses of sugar of lead have been given by way of experiment to glandered horses without producing any effect, that the preparations of lead are not considered poisonous; certain it is, however, that a great number of horses and cattle have been poisoned by grazing near those places on the Hill of Mendip, where lead ore is smelted. Great mischief has thus been done in a village named Wookey, through which a small river, or rather brook, runs. After very heavy rains, the water that flows down the hill seems to be impregnated with lead; for at such times it overflows certain meadows, and on the water retiring these meadows have poisoned horses, cattle, and other animals. This fact is well known in the village and its neigh-

bourhood; and animals thus poisoned are said to be *mindered*, or *moindered*. (See my Veterinary Dictionary.) Animals very seldom recover from it, though they sometimes linger a considerable time. I have been informed that one farmer in Mendip lost fifteen head of cattle in consequence of their breaking down the fence which surrounded the smelting place, to get at the grass which grew within. They suppose that it is the fine particles of the lead ore which does the mischief; but I think it more probable that it depends upon the fumes or volatile parts that are carried up in smelting, which being condensed, fall gradually down in the form of a light powdery oxide or carbonate of lead.

I have been informed of three cows that were cured, and I have reason to believe that the remedy employed was human urine, and driving them about slowly great part of the day on which the illness was first observed. Sulphate of copper is poisonous if given in too large a dose; and the means pointed out for counteracting arsenic may be useful also in this case if employed early.

The most powerful of the vegetable poisons is *Ticunus*, which destroys any animal in a few minutes if applied to a minute wound in the skin, in the way of inoculation. I have seen a rabbit die in about five minutes after it was inoculated. There are no means, I believe, of counteracting this poison. *Cicuta Virosa*, Long-leaved Water-hemlock, or Cowbane, is a strong poison, and has been the means of destroying a great number of cattle. Its deleterious

property, with respect to cattle, was first discovered by Linnæus, in a country where a great number of cattle had been destroyed by it. It is seldom found, I believe, in England. The leaves of the yew-tree are a strong poison, and have often destroyed horses and cattle. I once gave five ounces to a young donkey, and it killed him within an hour.

Professor Viborg, according to Mr. Bracey Clark, gave twelve ounces of the green plant to a horse, of which he ate eight ounces, and fell dead without any indication of suffering at the end of one hour from his swallowing it. The same effect was produced by six ounces in an experiment of MM. Bredon and Henon, of Lyons. A mule died in five hours after taking six ounces with some hay. They all died suddenly and without convulsions. The only effect observed, on examination after death, was, that the intestines of the mule had a small spot of extravasated blood. But it is remarkable, that eight ounces of the yew plant with twice as much oats did not kill or produce any sensible inconvenience, and the same result took place in three or four experiments of Professor Viborg. A farmer near Exeter lost several cows, by eating the leaves of some yew trees which grew in the hedge of the field where they were kept. The following circumstance, also, was related in Woolmer's Exeter Paper: "A yew-tree having been felled in a field at Warley, Somerset, belonging to Farmer Hiscox, in the course of the ensuing night, six out of seven cows, that were with calf, died in consequence of eating its branches."

We know of no antidote to this poison, but we can certainly prevent our cattle from eating it. Hemlock is said to be poisonous, but I have given eight ounces to a young ass, which he ate readily, and suffered no inconvenience from it.

I once gave two drams of Stavesacre to a glandered horse; he died in great pain the following night. It is probable that more horses have been killed by Aloes than by any other vegetable preparation; that is to say, by strong physic, or by neglecting the horse during its operation. The best antidote in this case is gruel made of arrow-root, or fine wheat-flour. The animal poisons are the stings of venomous reptiles, for which stimulating embrocations seem to be better remedies than fomentations. (See Embrocations.) The matter which flows from the nose of a glandered horse is a strong poison, whether applied to a recent scratch in the skin, or swallowed with food or water. (See vol. i. and iii.) The saliva of a mad dog is a deadly poison to man, and to all animals, and one for which, as yet, we know of no remedy.

POMEGRANATE.—*Punica Granatum*. The dried fruit is a moderately strong astringent; and is sometimes employed in diarrhœa, particularly in horned cattle, but generally improperly. The bark and flowers possess the same properties.

The dose is from half an ounce to an ounce.

POPPY, RED or CORN, and WHITE. —*Papaver, Rhœas et Somniferum*. The heads of the white poppy dried make a good fomentation

for wounds and tumours that are in a painful or irritable state; for which purpose they are to be broken in pieces, and boiled in water, so as to make a strong decoction. This decoction proves very serviceable in irritability of the bladder, if used as a glyster, the bowels having been previously emptied: for this purpose the decoction should be made stronger, by boiling it for some time. Although the capsules of the red poppy contain opium, yet it is in such small quantity, that they are rarely if ever used as an anodyne.

It seems very probable that the good effect of this decoction depends in a great measure upon the opium which is extracted from the poppy heads: it may be better, therefore, to dissolve in gruel a proper dose of opium, when an anodyne glyster is required, as we cannot be accurate in respect to quantity when the decoction of poppies is employed. It has been ascertained that the anodyne or narcotic qualities of opium are diminished by long boiling, and that the extract of poppies, however carefully prepared, is very inferior in every respect to opium. No hesitation therefore should be felt in preferring opium to the extract or decoction of white poppy heads, whether it be wanted for a clyster, a drench, or a fomentation.

POTASH; CARBONATE OF POTASH.—*Potassa; Potassæ Carbonas.* There is a great variety of preparations of potassa used in medicine, as the *liquor potassæ*, or solution of potassa, which is diuretic and antacid; the *potassa fusa*, or fused

potassa, a caustic deliquescent salt; the *potassa cum calce*, or potassa with lime, a milder caustic; the *potassæ tartras*, or tartrate of potassa, a cathartic capable, it is said, of preventing the griping so frequently caused by resinous purgatives; the *potassæ nitras*, or nitre (which see), &c. The potash of commerce is in a very impure state, and not applicable to chemical or medical purposes. When sufficiently purified, it is joined with diuretics, purgatives, and tonics, with advantage. In those cases which require the use of tonics there is sometimes an acidity in the stomach, which potash corrects; and it renders purgative medicines more easy of solution. Given alone it acts as a diuretic. When neutralized with acids, it has a laxative property, but requires to be given in large doses. With sulphuric acid it forms vitriolated tartar, or sal polychrest (*Sulphate of Potash*); with nitrous acid, that very useful medicine termed nitre (*Nitrate of Potash*), which, contrary to what we have just observed, is a diuretic in a moderate dose (see *Nitre*); and with vinegar, or acetous acid, it makes soluble tartar (*Tartarized Potash*). The purified potash is named in the shops *Sub-carbonate of Potash*; formerly called Salt of Tartar, or Wormwood. When potash is deprived of the carbonic acid with which it is naturally combined, it becomes a strong caustic; and when diluted is sometimes employed as a wash for the mange. In this state it is termed *Pure Potash* or *Kali*, and is seldom used internally. (See Alkalies.) When saturated

with carbonic acid it is named *Carbonate of Potash.*

POULTICE or CATAPLASM; of LINSEED; of BEER-GROUNDS; of CARROT. —*Cataplasma; Lini; Cerevisiæ; Dauci.* Cataplasms are useful applications for promoting suppuration in inflamed tumours, and in those diseases of the horse's heels, named grease, scratches, cracks, &c. consisting in inflamed swellings of the heels, fetid discharge, painful and troublesome ulcers, or cracks generally under the fetlock or bend of the heel. The poultices commonly employed on those occasions are of the emollient kind.

EMOLLIENT POULTICE.

No. 1.	Linseed meal	½ lb.
	Bran	2 quarts
	Hog's lard	4 oz.

Boiling water enough to make a soft poultice.

No. 2. Turnips, thoroughly boiled and mashed; any quantity. Linseed meal enough to form the poultice.

A poultice made of carrot, grated very fine, is detergent and stimulating.

Either of these simple poultices may be converted into an anodyne poultice by the addition of opium; into a fermenting poultice, by the addition of yeast, and by substituting oatmeal for linseed meal; into an astringent poultice, by the addition of Goulard's Extract, sugar of lead, or powdered

alum: and into a detergent poultice, by the addition of white or blue vitriol.

In obstinate cases of virulent grease, where there is much pain, and a stinking dark coloured discharge, and especially when emollients are found ineffectual, the detergent poultice has quickly cured the disease, and in such cases even a solution of corrosive sublimate has been used with the best effect. But emollients should always be first fairly tried, and some diuretic medicine given. (See vols. i. and iii.)

POWDERS.—*Pulveres.* These are sometimes convenient forms for giving medicines, as many horses will take them in their corn without reluctance. It is by no means proper, however, for such as have a delicate appetite and are remarkably nice in feeding; for although they may after some time eat their food, yet the reluctance with which it is taken would prevent its being readily digested, or proving so nutritious as it would do, were it not so medicated.

Some horses, however, eat their corn very readily when mixed with powder; and to such it may be given without inconvenience. There is another objection to this mode of giving medicine, which is the difficulty of ascertaining whether the whole or a part, and how much of the powder that is mixed with the corn, is taken. But this may in a great measure be done away, by sprinkling the corn with water, and mixing the powder with it very carefully. As we have before observed, whenever a

horse appears unwilling to eat his corn thus medicated, the medicine should be given in some other form. The medicines best suited to this purpose are antimony, sulphur, resin, emetic tartar, nitre, caraway seeds, anise-seeds, &c. Medicines that are given in the form of powder should be finely sifted, or levigated: and when kept in that form, should be preserved in a well corked bottle.

PRECIPITATE, RED (by *nitric acid.*)—*Oxydum Hydrargyri Rubrum* (per *acidum nitricum*). This is the nitric oxide of mercury, or red nitrated quicksilver, and is useful as a mild caustic or detergent, and has a good effect in foul ulcers. It may be used either alone, finely powdered and sprinkled on the affected part, or mixed with various ointments. (See Detergents.) It is made from quicksilver and nitrous acid, but is considerably weaker than a solution of that metal in nitrous acid. It becomes, however, a strong and very efficacious caustic, when dissolved in nitrous acid. This solution may also be mixed with unctuous substances, forming with them good detergent ointments; or it may be diluted with water so as to form a detergent lotion of considerable efficacy.

PREPARED KALI.—*Kali Præparatum.* See Potash.

PROOF SPIRIT.—*Spiritus Tenuior.* Equal parts of rectified spirit of wine and water. (See Alcohol.)

PRUNELLA. The same as nitre, or nitrate of potash. A cooling diuretic and febrifuge. The

dose half an ounce, once or twice a day. (See Febrifuges, Alteratives, and Diuretics.)

PULVIS ALOES cum CANELLA. See Hiera Picra.

PUNICA GRANATUM. See Pomegranates.

PURGATIVES. See Cathartics.

PURGING BALLS. See Cathartics.

PYRETHRUM. See Pellitory of Spain.

QUASSIA.—*Quassia.* There are two species of quassia; the *quassia simaruba* and *excelsa.* The first is a native of South America and the West Indian Islands; the last of Surinam, Jamaica, and the Caribbean Isles. The bark of the former and the wood of the latter are generally employed in medicine. Both of them are powerful bitters and extremely efficacious in cases of weakness of the stomach and bowels. They may be given in powder, in doses from one to two drams, joined with ginger, or some other stimulant, and a small quantity of carbonate of soda or potash.

QUERCUS CORTEX. See Oak-Bark.

QUICK-LIME.—*Calx Usta.* See Lime.

QUICKSILVER.—*Hydrargyrum.* This metal and its preparations have been noticed under the head *Mercury.* I have only to observe here that, on reflecting upon the injurious effects of those preparations, especially sublimate, the most simple preparation, such as the Quicksilver Pill, Blue Pill, or something analagous to it, may produce all the good effects that have resulted from the use of Sublimate. When Sublimate, or even Calomel, is given

daily in what is commonly considered a moderate dose, and continued for some time, the stomach and muscular system are often materially injured, and the kidneys have been found partially disorganized; that is, enlarged, of a pale colour, and becoming rotten. Such preparations deserve a further and more careful trial than they have ever received. Small doses of the *Hydrargyrum cum Creta*, that is, Quicksilver and Chalk rubbed together in a mortar, until the globules disappear, or Quicksilver rubbed in the same manner with honey or mucilage of gum Arabic, may be given in every feed the horse takes, in a very small quantity, so as to impregnate the blood with mercury without disordering the stomach, or materially deranging the kidneys or muscular system. I am of opinion that this method of exhibiting mercury is likely to cure the glanders, when taken early. (See Mercurial Pill and Ethiop's Mineral.)

I have reason to believe that those mild preparations of Quicksilver or Mercury, in which the metal appears to be reduced to such a state of minute division as to lose in a great degree, or wholly, its metallic appearance, may be employed with the best effect, and in small doses, in those diseases in which Sublimate is now considered the only effectual remedy. Though large doses of Sublimate have been given in experiments on glandered horses, and sometimes without apparent ill effect; yet even in the doses which are generally given in farcy, that is, about ten grains, it is capable of doing the most

material injury; producing effects which are not visible until they are incurable. If the milder preparations of Quicksilver can accomplish all that can be accomplished by Sublimate, (and I am satisfied they can, in the farcy as well as the glanders, for I do not consider the latter as an incurable complaint), they ought surely to be fairly tried, and then I think they will be found effectual. Ethiop's Mineral, now named *Black Sulphuret of Mercury*, I am inclined to believe is the best and certainly the mildest preparation that can be employed, though generally considered nearly inert. If one dram of Ethiop's Mineral be given in the horse's food once or twice a day, it will gradually be absorbed into the circulation, and effect all that can be accomplished by Mercury in any of its forms. A larger dose however is generally given. (See *Mercury*.)

QUININE, SULPHATE OF.—*Quininæ Sulphas*. See Bark.

RAGWORT. A flowering plant that grows principally on moors and other moist situations. I have been informed that it causes lethargy or sleepy staggers in horses, and that sheep eat it freely without injury: but there is no probability in this opinion.

RAKING. A term employed by farriers for an operation which consists in introducing the hand into the horse's *Rectum*, and drawing out any hard excrement that may have lodged there. This may

generally be effected more to the purpose, and with greater ease to the animal, by means of clysters.

In some cases, however, the straight-gut is so loaded with hard dung that raking is a necessary operation; and it is sometimes difficult or impossible to throw up a clyster before it is done. The operation is useful also for the purpose of ascertaining the state of excrement when none can be found about the litter: whether it be soft, hard, or slimy. The only method of knowing whether the urinary bladder is full and distended, or empty, is by introducing the hand into the straight-gut, where the bladder can be easily felt, as it lies immediately beneath the gut next to the belly or abdomen. The nails should be pared smooth, and the hand oiled or smeared with hog's lard, before the operation is performed. (See Clysters; also vol. i. 15th Edition.)

RANUNCULUS FLAMMULA; RANUNCULUS ACRIS. Lesser Spearwort; Upright Meadow Crowfoot. These are indigenous plants, generally found in moist marshy places. The leaves when bruised are so stimulating as to blister the human skin, but they are not used in veterinary practice.

RAPHANUS RUSTICANUS. Horse-Radish; which see.

RATTLESNAKE-ROOT.; Seneka-Root.—*Senegæ Radix.* Seneka is a perennial plant found in North America. The root is inodorous, and is, on being first chewed, of a sweetish and

mawkish flavour, but, after being chewed for a short time, has a hot and pungent taste. It is thought to possess considerable power as a tonic and stimulant, and may be employed in the dose of three or four drams.

REALGAR. A natural combination of sulphur and arsenic, not used as a medicine. (See Arsenic and Orpiment.)

RECTIFIED SPIRIT. Alcohol or Spirit of Wine.—*Spiritus Rectificatus.* This is obtained in a diluted state from fermented liquors by distillation, and is afterwards rectified or concentrated, by repeating the operation two or three times. Rectified spirit is the basis of many useful embrocations, for strains, bruises, &c. It dissolves camphor and all the resins very readily; hence we have camphorated spirit, opodeldoc, Friar's Balsam, &c. Mixed with an equal quantity of water it forms what is termed Proof Spirit, which is the liquid generally employed for making tinctures. (See Alcohol.) Rectified Spirit is often used undiluted as an embrocation for strains; and, when the injury is deeply seated, may be serviceable. I think, however, it is rendered more efficacious by the addition of soap, ammonia and camphor, or oil of rosemary. Rectified spirit is never employed as an internal remedy in the horse; though fermented liquors, such as beer, porter, or wine, have been often given with great advantage, in cases which required cordials. Horses, that have been so fatigued with a long chase or journey as to refuse

their food and appear quite exhausted, are much refreshed by taking a cordial ball in half a pint of beer, and feed soon after with great alacrity. The advantage thus derived is merely temporary, as they are not by this treatment rendered adequate to another chase or journey quicker than they would otherwise be. (See Cordials, Gruel, and Restoratives, Alcohol, and Introduction.)

RED PRECIPITATE. See Precipitate, Red.

REGULUS OF ANTIMONY. Common or crude antimony, deprived of its sulphur, and brought to a metallic state. It is never used as a horse medicine.

REPELLENTS. A term given to applications or medicines that are supposed to have the power of causing tumours or eruptions to recede from the surface of the body.

Inveterate cases of mange and grease, when cured by Sublimate or other powerful applications, have been at times repelled, and have brought on a fatal inflammation of the lungs or bowels.

This opinion is questioned, or rather doubted, by some modern practitioners, and should certainly be received with caution, and with considerable limitation. I have known several bad cases of virulent grease cured by means of Sublimate and Blue Vitriol, and of inveterate mange by Sulphur, Turpentine, Oil of Tar, &c., without being followed by any internal disease; and I have known instances, particularly two of inveterate mange, which were followed by inflammation of the bowels. In all such

cases, therefore, it will be most prudent to give the horse bran mashes and some alterative, laxative, or cathartic medicines, previously to the exhibition of such remedies; and the application may at first be rather weak, and the strength gradually increased, or rowels may be inserted in the thigh in cases of grease. (See vol. i. Mange and Grease.)

RESINS are distinguished by their inflammability, and by combining readily with rectified spirit and oils. They are generally solid, and incapable of being mixed with water. (See Rosin.)

RESOLVENTS. Medicines that disperse tumours, either external or internal.

RESTORATIVES. Medicines that restore the strength of the body after violent fatigue or illness. For this purpose a light and nutritious diet, assisted by good grooming, and voluntary exercise, is generally the only thing necessary: sometimes, however, it may be proper to give also some cordial or tonic medicine. (See *Tonics*, *Cordials*, and *Stomachics*.) The food on such occasions should consist of bruised oats, gruel, mashes of fine sweet bran and malt, gruel of wheat-flour, or boiled barley. In India strong broths, or soup, thickened with barley or some other grain, and rendered stimulating by spices, are frequently given as restoratives to horses when worked hard; perhaps good mild beer or ale, mixed with good gruel made of groats or oatmeal, or what is still better, fine wheat-flour, would be found on some occasions equally effectual. But it will be found that when a horse has for some time been worked

hard and fed high, there is nothing that will so completely restore him, as rest in a large box, or well-ventilated stall, with a diet of bran mashes, and only a moderate quantity of hay for two or three days. This will empty the large bowels, and afford that rest to the stomach and bowels, which, in such cases, they always require. Three or four drams of aloes, with a little ginger and soap, may sometimes be useful in such cases.

RHABARBARUM. See Rhubarb.

RHAMNUS CATHARTICUS. See Buckthorn.

RHAPONTICA. A species of rhubarb.

RHATANIÆ RADIX. Ratanhy Root. This plant is a native of Peru, has a bitter, austere taste, and is a most powerful astringent. See Krameria.

RHEUM. See Rhubarb.

RHUBARB; the Root.—*Rhei Radix.* This is a native of China and Tartary. Turkey or Russian rhubarb is obtained from the last mentioned place, besides which a great quantity is sent to this country from the East Indies, but it is not prepared with the same care as that imported from Turkey, which has a peculiar aromatic odour, and a bitter, slightly astringent, and subacid taste; is easily pulverized and produces a powder of a light yellow colour. Rhubarb is stomachic, astringent, and purgative, according to the dose in which it is exhibited. It is not, however, employed for the latter purpose as a horse medicine, but is not unfrequently administered as a stomachic, in doses from half

an ounce to an ounce, combined with aloes and ginger.

RHUS TOXICODENDRON; Folia. Sumach or Poison-Oak Leaves. The sumach is a native of North America. The leaves are stimulant and narcotic, and have been successfully employed in human medicine in cases of paralysis, but I am not aware that it has been tried by Veterinarians.

RICINUS. This is an annual plant found in Greece, Hindostan, the East and West Indies, South America, &c. The seeds yield by coction and expression castor oil; which see.

ROBORANTS. Medicines that strengthen the system. (See Tonics.)

ROSEMARY.—*Rosmarinus.* This plant is cultivated in Britain, but is a native of the south of Europe, Greece and Barbary. It flowers in April and May in this country, and the leaves and flowers yield an essential oil, which appears to contain camphor, and which is frequently used as an embrocation for strains and bruises, mixed with rectified spirit and soap. This mixture is nearly the same as the celebrated *Opodeldoc;* and by the addition of camphor it becomes the same thing.

ROSES. The buds or petals of the Red Rose (*Rosa Gallica*) have a weak and astringent power. Infusion of roses with a small proportion of alum or sulphuric acid, and sweetened with honey, is sometimes employed in cases of inflamed mouth and gums. The petals of the Damask Rose (*Rosa Centifolia*) possess a weak laxative quality without

any astringency: neither of them are useful as horse-medicines.

ROSIN or RESIN, YELLOW and BLACK. —*Resina Flava ; Pix Nigra.* Yellow resin is the residuum of the distillation of oil of turpentine. It is a weak diuretic, and is sometimes given with advantage to horses that are subject to swelling of the legs. The dose is about half an ounce, which may be powdered and mixed with the corn: it is necessary to continue this medicine for several days, or until its diuretic effect is considerable. It is used also in the composition of plasters and charges. Black resin is not used in medicine. (See Alteratives.)

ROSMARINUS. Rosemary; which see.

ROWELLING. An operation often performed in veterinary practice. It consists in making an incision in the skin, about an inch in length, with a pair of short and strong-bladed scissars. The finger is then introduced, in order to separate the skin from the subjacent parts all round the incision, that the cavity may contain a circular piece of leather about an inch and a half or two inches in breadth. Before this leather is introduced, a hole is made in the centre about half an inch in diameter; it is then covered with tow (the hole being left open), and smeared with digestive ointment: when the rowel is put in, the hole in the middle of the leather is plugged up with a little tow.

In this situation it is left until matter forms, which generally happens in three or four days; the

plug of tow is then withdrawn, the rowel moved, and the matter suffered to flow out, in which state it remains as long as is thought necessary. Thus we see that a rowel is an artificial issue or abscess, the leather first causing inflammation, which ends in suppuration or the formation of matter; and the matter continuing to be formed so long as the extraneous body or leather remains under the skin. The rowel must be moved every day.

The intention of rowelling is to divert inflammation from any important organ or part of the body. Thus, when the lungs are inflamed, the animal certainly dies, unless it is put a stop to; but the skin may be inflamed to a considerable extent without danger: we therefore put a rowel in the chest, which, though not sufficient of itself to stop the inflammation of the lungs, contributes materially to this purpose, and with the other necessary remedies often effects a cure. In large swellings of the hind legs, and obstinate cases of grease, rowels in the thighs are good remedies.

In shoulder strains, a rowel may be put in the chest with good effect. In short, whatever inflammation attacks an essential and important part of the system, much benefit will be derived from inserting a rowel in some contiguous part that is of little importance. When a rowel is removed, the part generally heals of itself; if not a little Friar's balsam may be applied.

Many practitioners consider blistering the sides extensively as a more effectual means of diverting

inflammation from the lungs than rowels, and I am inclined to think they are right. Plentiful bleeding, however, on the first attack of the disorder, to the extent of six, or even seven or eight quarts, will generally render both of them unnecessary. The rowel is sometimes smeared with blistering instead of digestive ointment: but there is danger of the cantharides being absorbed and causing inflammation of the kidneys. I have known a horse destroyed in this way. In all cases of internal inflammation, very little can be accomplished either by rowels or blisters. It is from plentiful bleeding alone that relief can be obtained, not by taking off a precise or determinate quantity, but by continuing to draw blood till the horse is relieved, or until he becomes faint. This is particularly to be attended to in that disorder which is commonly called a *chill;* but which is in fact a violent inflammation of the muscles of the shoulders, the loins, and other parts of the body, sometimes extending to the diaphragm, and even to the heart, the lungs, and other internal organs, and not unfrequently translated to the feet. (See vol. i. 15th edit. article Inflammation of the Muscular and Nervous System.) Now in this disorder the name *chill,* or the misconception of the nature of the disease, which commonly obtains among grooms and farriers, has led to the very injurious practice of giving stimulants or cordials; whereas nothing but copious bleeding, repeated as often as it may appear necessary, or until relief is afforded, can do any good. The auxiliary remedies

are a laxative ball and clysters, unless the bowels are already open, and frequently giving bran or white water with the chill taken off; and when the bowels are open small doses of nitre, or balls of nitre and camphor, may be given. (See my Veterinary Dictionary, article Chill.)

Whenever it is thought necessary to make the ointment which is used in rowelling more stimulating, it may be easily done by adding oil of turpentine to it.

RUBEFACIENTS. A term in human medicine, applied to compositions or simples that redden or inflame the skin. Of this kind are mustard, turpentine, and liquid ammonia. (See Embrocations.)

RUBIA. See Madder.

RUE.—*Ruta.* This is a perennial evergreen, a native of the southern parts of Europe, but cultivated in this country. Its properties are stimulant and antispasmodic. It has lately been recommended in locked-jaw as a vehicle for opium, camphor, and assafœtida, in the form of decoction. It may possess some power as an antispasmodic, but certainly is very inferior to many others. Gibson often prescribes it, but generally as a vehicle for other more active medicines. Many farriers still employ rue in farcy with soap and other diuretics, which they give in large doses; it is used also as a fomentation, and is by some thought to possess considerable power as a preventive of hydrophobia.

RUMEX AQUATICUS. Water-Dock. This

is an indigenous perennial plant, the root of which is powerfully astringent, but is not employed by Veterinarians.

RUTA. See Rue.

SABINÆ FOLIA. See Savine.

SACCHARUM, *ejusque* SYRUPUS EMPYREUMATICUS. Sugar and Molasses. The dust of sugar is sometimes blown into the eye in some diseases of that organ. (See my Veterinary Dictionary and two first vols. of Farriery.) A small quantity of molasses, mixed with a horse's water, every day, will speedily fatten him.

SACCHARUM SATURNI. See Sugar of Lead, Acetate of Lead, and Lead.

SAFFRON.—*Crocus.* This is found wild in some parts of this country, and was formerly thought a good cordial medicine, and frequently employed as such: but at this time medical practitioners seem to think it destitute of any medical virtues. It is still retained, however, in their Pharmacopœiæ, probably on account of its elegant yellow colour and fragrant smell. As a horse medicine it is certainly not worth notice, though sometimes prescribed in cordial medicines.

There are two kinds of saffron kept in the shops, viz. hay saffron and cake saffron. The former is to be preferred, as the latter is always adulterated.

SAFFRON, MEADOW.—*Colchicu Autumnale.* See Meadow-Saffron.

SAGAPENUM.—*Sagapanum.* This is a gum-

resin, and is the produce of a Persian plant as yet unknown. Its properties are similar to, but weaker than assafœtida.

SAGE.—*Salvia*. A plant not used in veterinary practice.

SAGO. A farinaceous substance, which, when boiled in water, is a proper drink for sick horses that are incapable of feeding. (See Gruel.)

SAINT-JOHN'S WORT.—*Hypericum*. A perennial indigenous plant not used in medicine, though formerly supposed to possess many virtues. The oil of St.-John's wort sold by druggists, is nothing more than the common green oil, which is sold under a variety of names. (See Oils.)

SAL AMMONIAC, or MURIATE OF AMMONIA.—*Sal Ammoniacum*, sive *Ammoniæ Murias*. A neutral salt, composed of muriatic acid and ammonia, which, when dissolved in vinegar and water, forms a good embrocation for strains and bruises.

Osmer, an old veterinary author, prescribed it for a distemper or epidemic catarrh in horses, that prevailed in the year 1750, in a dose of one ounce, joined with one ounce of nitre, half an ounce of Castile soap, and two drams of camphor, to be given three times a day. This, I should think, would operate not only as a powerful diuretic, but would be liable to irritate the stomach in a dangerous degree. (See vol. i. and vol. iv. article Distemper.) It is a medicine I have never given internally, not considering it either so safe or so efficacious as nitre.

SAL POLYCHREST.—*Sulphas Potassæ cum Sulphure.* This is made by mixing together equal weights of powdered Nitre and Sublimed Sulphur, and throwing the mixture, in small portions at a time, into a red-hot crucible. As soon as the deflagration is finished, the salt is to be allowed to cool, and then put into a close-stopped glass vessel. Its properties are similar to those of Sulphate of Potass, and it is sometimes combined with aloes as a laxative or cathartic. It passes through the kidneys undecomposed.

SAL PRUNELLA. This salt is made by melting two pounds of nitre in a ladle or crucible, and adding to it, while in that state, one ounce of flour of sulphur. A deflagration or combustion immediately takes place, and as soon as that ceases it may be poured into moulds, or upon a marble slab. By this operation a chemical change is effected, and the result is a mixture or combination of nitrate and sulphate of potash; in other words, sal prunella consists of nitre and sal polychrest, or sulphate of potash.

SAL VOLATILE. This term is indiscriminately applied to compound spirit of ammonia, and prepared ammonia, or smelling salts; but the former is often distinguished by the name *spirit of sal volatile.*

SALICINE. See Salix.

SALIX. The Willow. There are three varieties of willow, the barks of which are tonic and astringent, and have been successfully substituted

for Peruvian bark. A preparation called salacine is now made from willow-bark, which possesses its tonic principle in a concentrated state, in the same manner as quinine does that of cinchona. The dose may be from ten to thirty grains, or perhaps more in some cases, twice or thrice a day.

SALT, COMMON.—*Sodæ Murias.* See Muriate of Soda.

SALTPETRE.—*Potassæ Nitras.* See Nitre.

SALT OF STEEL, SULPHATE OF IRON, or VITRIOLATED IRON.—*Sulphas Ferri.* A combination of sulphuric acid and iron. This is by no means so remarkable for its tonic power in the horse, as in the human subject; but it is said to possess this quality, and is often given in doses from one or two, to four drams. I have several times employed it in cases that appeared to require tonic remedies, but with little effect. (See Iron.)

SALT OF TARTAR or WORMWOOD. Pure Carbonate of Potash. *Potassæ Carbonas Purissimus..* See Potash and Alkalies.

SALTS. When an acid combines with an alkali, earth, or metallic oxide, it is termed a salt. The alkali, earth, or metallic oxide is denominated the base, and when neither the acid nor the base predominates, it is called a neutral salt. When, on exposure to atmospheric air it is either reduced to powder or becomes covered with a white crust, it has received the appellation of an efflorescent salt; but if it absorb moisture from the atmosphere, it is termed a deliquescent salt

The name of each salt is compounded of two words; the one indicating its acid, the other its base. Thus Glauber's salt, which is composed of sulphuric acid and soda, is called sulphate of soda. Nitre, which is compounded of nitric acid and potass, is termed nitrate of potass.

When a salt is formed with an acid not completely oxygenized, it terminates in *ite* instead of *ate*, as phosphite of soda; but if the salt contain acid in excess, the word *super* is prefixed to its name, as super-acetate of lead. Should, however, its base not be fully saturated with oxygen, the word *sub* is substituted for *super*, as sub-carbonate of potass. (See Acids and Alkalies.)

SALVIA. See Sage.

SAMBUCUS. See Elder.

SAPO. See Soap.

SARCOCOLL.—*Sarcocolla.* A gum-resin produced by a plant found in Ethiopia. It is not used in medicine at present, but was formerly supposed to possess peculiar virtues in agglutinating wounds.

SARSAPARILLA. — *Smilax Sarsaparilla.* This is a perennial plant, indigenous to South America and Virginia. It is much used in human medicine as a restorative after a mercurial course, but is not employed in veterinary practice.

SASSAFRAS.—*Laurus Sassafras.* This is a native of the southern parts of North America and Cochin China. Its properties on the human frame are stimulating, diaphoretic, and diuretic, but the only part of sassafras that can be of use in veteri-

nary practice is the essential oil, which is an aromatic stimulant of considerable power, but less useful than many others already described.

SATURNINE LOTION.—*Lotio Saturnina.* This is made by dissolving two ounces of superacetate (sugar) of lead in one pint of vinegar, and three or four pints of water, and is considered an useful application to recent strains, bruises, and other injuries attended with inflammation.

SATURNINE OINTMENT.—*Unguentum Saturninum.* This is made by incorporating Goulard's extract of lead, or sugar of lead (super-acetate of lead) with hog's lard or wax ointment. (See Goulard, Astringents, and Ointments.)

SATURNINE POULTICE.—*Cataplasma Saturninum.* See Poultice, Astringent Ointments, Acetate of Lead, and Embrocations; also vol. i.

SAVINE.—*Juniperus Sabina.* This shrub is a native of the South of Europe and the Levant. Farriers often employ the leaves in a green state as an anthelmintic; but I have never seen them do any good.

SCAMMONY.—*Convolvulus Scammonia.* This plant is a native of Syria and Cochin-China. The scammony of commerce is a gum-resin obtained from the root of the plant. It should be light, friable, and resembling a honey-comb. Its colour is blackish or dark grey. It is a strong purgative, but is scarcely ever employed in veterinary practice when aloes can be procured.*

* I have lately tried scammony in various doses; it produced

SCILLA. See Squill.

SCORDIUM. Water Germander. The leaves of scordium were formerly employed as an astringent and corroborant; and there is still an electuary of scordium or diascordium kept by druggists for the accommodation of farriers, who use it occasionally as an astringent.

SEA-SALT. See Muriate of Soda.

SEA-WATER. Some horses will drink a sufficient quantity of sea-water to excite purging, which may be useful, should such horses be affected with swollen heels, inflamed eyes, or other inflammatory complaints.

SENEKA-ROOT. See Snake-Root.

SENNA; the Leaves.—*Cassia Senna; Folia.* This species of cassia is a native of some parts of Africa. The leaves are an effectual purgative in the human body; but in the horse it is an inconvenient medicine, on account of the large quantity requisite to produce this effect. Some writers on farriery have recommended a strong infusion of senna, with Glauber's salt, as an expeditious laxative. I have given senna in considerable doses without the least effect. I tried also the following mixture, so strongly recommended by many writers on farriery, which did not affect the bowels in the slightest degree:—

scarcely any effect until six drams were given at one dose, which was followed by moderate purging. This experiment was made only on one horse: should another trial be made of it, a smaller dose of two or three drams should be first given.

Senna, three ounces, infused in a quart of boiling water, and kept in a warm situation about an hour; the infusion was then strained off, and the remainder pressed off by considerable pressure. In this infusion were dissolved four ounces of Glauber's salt, and the whole was given to a horse at one dose.

SERPENTARIA. See Aristolochia Serpentaria.

SEVUM. Mutton Suet; which see.

SIALOGOGUES. Medicines that cause an increased secretion of saliva; the principal of which are the preparations of mercury.

Local means were formerly employed to effect this in the horse; that is, by bridling him, wrapping round the bit some linen that had been soaked in vinegar, in which garlic, assafœtida, pellitory of Spain, &c. had been steeped; also by putting balls between the grinders, composed of similar ingredients, or others capable of stimulating the salivary glands, and bringing on a discharge of saliva: these were called masticatories, or chewing balls. A late writer (Mr. Wilkinson) has recommended chewing balls, composed of antimonial powder, gum, &c. in epidemic catarrh or distemper, when attended with sore throat and difficulty of swallowing.

SILVER.—*Argentum.* The only preparation this metal affords is the lunar caustic, or nitrate of silver; an application of great importance in surgery, whether human or veterinary. (See Caustics, Lunar Caustic, and Argenti Nitras.)

SIMARUBA. A species of Quassia. See Quassia.

SINAPIS. Mustard; which see.

SINAPISMS.—*Cataplasma Sinapeos.* Stimulating poultices, or liniments, in which mustard is a principal ingredient. (See Embrocations and Mustard.)

SNAKE-ROOT.—*Senegæ Radix.* This, which is a perennial plant, is a native of North America. It is inodorous, of a sweetish taste on being first chewed, and afterwards hot and pungent. It is a stimulant and diuretic, increasing the action of the absorbents, and occasionally producing ptyalism. The idea that this root counteracts the bites of serpents, is now disregarded; but it is considered a useful medicine in cases of weakness, and may probably be employed with advantage in veterinary practice.

The dose is from two to four drams or more, and is generally given with carbonate of ammonia, or salt of hartshorn, camphor, and bark; in some cases opium is added. (See Tonics and Antiseptics.)

SOAP.—*Sapo.* The various kinds of soap have all a strong and diuretic quality; but the purer kinds only should be applied as internal remedies; and these are Castile, Spanish, and pure white soap. Soap is an useful ingredient in purgative as well as diuretic preparations.

The dose is from two or three drams to an ounce, but it is sometimes given in larger doses.

Soft soap is very useful in cleansing foul heels; and when mixed with oil of turpentine and spirit of wine, forms a good embrocation for indurated tu-

mours, or callous swellings. (See Embrocations and Liniments.)

SODA; Natron, or the Mineral Alkali. This is procured chiefly from the ashes of marine plants. Its medicinal properties are nearly the same as potash, but the prepared natron or soda is sometimes preferred as an ingredient in purgative and tonic medicines.

The dose is from two to four drams.

There are various preparations of soda, as the carbonate of soda (*sodæ carbonas*), which is antacid and deobstruent; the dried subcarbonate (*sodæ subcarbonas exciccata*), which is perhaps more conveniently administered than the carbonate, and answers the same purpose: it is extremely useful in painful affections of the urinary organs arising from acid in the urine; the sulphate of soda (*sodæ sulphas*), or Glauber's salts (see Sulphate of Soda); and the tartarized soda (*soda tartarizata*), which is cathartic, but not often prescribed by Veterinarians.

SOILING. By this term is meant feeding horses with grass, clover, lucern, vetches, or other green food, in the stable, instead of turning them to grass in spring or summer,—an indulgence, which every horse that works hard is entitled to, and which it is the proprietor's interest to afford him. Some horses, however, are so restless at grass, and so apt to stray, that turning them out is attended with danger and inconvenience. Horses also that are lame, or just recovered from a lameness, sometimes injure them-

selves at grass by taking too much exercise. In such cases, soiling for about a month in a large airy box is exceedingly useful. I consider vetches the best vegetable for soiling. Some people are advocates for keeping a horse all the year round upon hay and corn, and only allowing them green food in the spring now and then in sufficient quantity to open the bowels, and no more, and assert that by this mode of management they are able during the winter to go through a greater degree of labour than they otherwise would, and to keep in much better condition. This method of feeding hunters is now very extensively adopted.

SOLANUM DULCAMARA. Woody Nightshade. Bitter-Sweet; which see.

SOLUBLE TARTAR, or TARTRITE OF POTASH.—*Tartras Potassæ.* This is a laxative saline preparation, composed of cream of tartar and potash. It is sometimes given with infusion of senna, and is supposed to correct the griping so frequently induced by resinous cathartics. The dose may be from 4 to 8 ounces, according to the proportion of aperient medicine with which it is combined.

SOLUTION OF MURIATE OF LIME.—*Liquor Muriatis Calcis.* See Calcis Murias.

SOLUTION OF POTASS.—*Liquor Potassæ.* See Ley, Caustic.

SORREL.—*Rumex Acetosa.* An acidulous plant, sometimes prescribed by the veterinary practitioners of France in dysentery and molten grease; but not used by English Veterinarians.

SOUTHERNWOOD.—*Artemisia Santonica.* A fragrant shrub, directed by the London College as an ingredient in fomentations.

SPANISH FLIES. See Cantharides.

SPEARMINT.—*Mentha Viridis.* See Mint.

SPERMACETI.—*Cetaceum.* An unctuous substance, procured from the head of a certain species of whale. In medical practice it is often employed as a demulcent to allay irritation, as in cough, but is rarely employed in veterinary practice, and appears to differ very little in its medical properties from hog's lard or suet. It has been lately discovered that the muscular parts of all animals may be converted into a substance resembling spermaceti by maceration in water.

SPIKES, FLOWERING; of Lavender.—*Lavandulæ Flores.* A volatile oil, termed oil of spike, is made from lavender, and is much used by farriers; it appears, however, to be often nothing more than oil of turpentine coloured with alkanet root.

SPIRIT OF AMMONIA.—*Spiritus Ammoniæ.* See Ammonia.

SPIRIT OF MINDERERUS.—*Spiritus Mindereri.* See Acetate of Ammonia.

SPIRIT OF NITROUS ETHER.—*Spiritus Etheris Nitrosi.* See Acid, Nitric, and Nitrous.

SPIRITS. Brandy, Rum, Gin, or cordial liquors; but in medicine the word spirit is applied to alcohol, either pure or diluted. (See Alcohol.) There are various kinds of spirits used in medi-

cine; such as spirit of nutmeg, spirit of juniper, &c. which are made by distilling the medical substance with dilute spirit.

SPONGE, BURNT.—*Spongia Usta.* Burnt sponge is sometimes used by medical practitioners in scrophulous complaints, but it is never employed in veterinary practice.

SQUILL, or SEA ONION.—*Scilla; Scilla Maritima.* This is a native of Sicily, Syria, Barbary, and Spain. The bulb is extremely large, and is in one variety white, in another reddish. It is inodorous, bitter, and acrid. The best preparation of squill for veterinary purposes is the powder of the dried root, which, in the dose of one dram or more, is considered a good expectorant, and useful in chronic cough: in larger doses it generally acts as a diuretic, but is not a desirable medicine for that purpose, there being many diuretics more certain in their effect. *Gum ammoniacum* is an eligible addition to squill; and I have sometimes seen camphor and opium joined to it with good effect. One dram of the dried squill is equal to about five drams in its fresh state. There are three other preparations of squill made, viz. the spirituous and acetous tincture, and the oxymel; but these are not so well calculated for veterinary purposes. (See Expectorants.)

STANNUM. Tin; which see.

STAPHISAGRIA. Stavesacre; which see.

STARCH.—*Amylum.* Starch glysters with opium are sometimes employed in obstinate diarrhœa

or irritation of the rectum. In no other way is starch useful in veterinary practice, while the cheaper mucilages, such as linseed, marsh-mallow, &c. can be procured; but when these are wanting, it is capable of making a good mucilaginous drink. (See Emollients and Demulcents.)

The preparation named *Arrow-root* is a pure starch, and when made into gruel is the best and safest preparation that can be employed in diarrhœa, or to restrain the effect of purging medicine when it has been given too largely. Mixed with a watery solution of opium it forms a good anodyne glyster. (See Glysters; also vol. i. Diarrhœa and Physic.)

STAVESACRE; the Seeds. — *Staphisagriæ Semina*. This is a species of larkspur, and is a native of the south of Europe, flowering from June to August. The seeds of stavesacre are recommended as a topical application in cutaneous complaints, and for destroying those animalcules which are sometimes generated upon the horse's skin. They are used either in the form of a decoction, or finely powdered and mixed with train-oil, turpentine, &c.

Two drams of Stavesacre were given to a glandered horse; he died during the night following in great pain.

STEEL. The medical properties of steel are not supposed to differ from those of iron. (See Iron.)

STERNUTATORY. See Errhines.

STIBIUM. A name for antimony.

STIMULANTS. A term of very extensive signification, and which may with propriety be applied to the greater part of the articles of the Materia Medica. According to the celebrated Dr. John Brown, every medicine was considered as a *stimulant*; but it is probable that some, particularly the narcotics, have an opposite effect; especially the distilled laurel water. The term *stimulant* is generally applied to those substances which perceptibly increase the motion of the heart and arteries. Under this head a great variety of remedies are included, both internal and external; among the former are cordials, cathartics, diuretics, &c.; the latter consists of embrocations, ointments, liniments, &c.

If the reader is desirous to obtain information on this head, he may consult Cullen's Materia Medica, Murray's Elements of Materia Medica, Brown's Elements of Medicine, and Darwin's Zoonomia.

STOMACHICS. Medicines that strengthen the stomach and excite appetite.

The term is nearly synonymous with cordials in veterinary medicine; though from *stomachics* we generally expect a more permanent effect than from those preparations denominated *cordial*, as they approach more to the nature of *tonics*. A few receipts will be given under this head, which are intended for horses that feed badly without any apparent cause, and such as are subject to flatulent colic and indigestion. Horses of this description are generally lean and in bad condition.

STOMACHIC BALL.

No. 1.	Powdered gentian	2 dr. to ½ oz.
	Powdered ginger	1 dr. to 1½ dr.
	Carbonate of soda	1 dr.

Treacle enough to form the ball for one dose.

No. 2.	Cascarilla, powdered	2 dr.
	Myrrh	1½ dr.
	Castile soap	1 dr.

Syrup enough to form the ball for one dose.

No. 3.	Powdered quassia	2 dr.
	Aromatic powder	1½ dr.
	Soda	1 dr.

Treacle enough to form the ball for one dose.

No. 4.	Powdered colombo root	½ oz.
	Powdered cassia	1 dr.
	Powdered rhubarb, from 2 dr. to ½ oz.	

Syrup enough to form the ball for one dose.

Before stomachics are given, a mild cathartic ball is generally required. Improper management with regard to food and water is most commonly the cause of this disordered state of the digestive organs; too often assisted by immoderate work and general ill treatment. The error in feeding often consists in giving hay of a bad quality, which contains but little nutriment, and is difficult of digestion. This is a circumstance that particularly demands the attention of postmasters and other large proprietors of horses, as bad hay, especially when eaten largely, often induces a morbid or voracious appetite, both for food and for water: hence arise worms, cough,

roaring, broken wind, general weakness, and loss of condition sometimes, and, indeed, not unfrequently terminating in mesenteric consumption or *marasmus*. Much injury is often done by too liberal an allowance of good wholesome food, especially hay and water. (See Water, and Preface; also vol. i.) Such observations as I have now made will be found in some other parts of the book, and the repetition, it is hoped, will not be deemed improper, when it is considered that many important diseases depend upon bad management with regard to feeding; and that by a judicious alteration in the treatment of horses in that respect, stomachics, cordials, and tonics, may be rendered almost, if not quite, unnecessary.

STOPPING, for the Feet. A mixture of clay and cow-dung, or either of these separately, is commonly used for this purpose; and, by keeping the bottoms or soles of the feet moist and cool, often do good. In soles that are too thin and soft, or for the frogs when in that state, the following composition is more proper.

Tallow and tar, of each . . . . 1 lb.

To be mixed by melting together.

Mr. Goodwin has contrived a kind of boot for keeping the feet cool and moist, as well as for applying the above composition (see an Account of the Various Methods of Shoeing Horses, employed by different Nations, by Joseph Goodwin); and Mr. Cherry, of Clapham, has recommended a piece of firmly compressed felt or sponge, to be cut to the size of the sole of the foot, and inserted within

the shoe, after which it is to be wetted with cold water; this, by causing it to expand, will prevent it from falling out.

STORAX.—*Styrax.* Storax is a balsam, produced by a tree growing in the Levant, Italy, and France. The common and the strained storax are the only kinds kept in the shops. The former is in the form of saw-dust, intermixed with resinous matter of an agreeable odour: the latter is extracted from this dust, and is far more pure; indeed, it is the only kind that can be employed for medical purposes. In its medical properties it resembles balsam of Tolu. (See Balsam of Tolu.)

STRAMONIUM. See Thorn-apple.

STRYCHNOS NUX VOMICA. See Nux Vomica.

STYPTICS are medicines which constringe the blood-vessels when wounded, so as to stop an effusion of blood. Many preparations have been recommended for this purpose: but when the size of the wounded vessel is at all considerable, an adequate degree of pressure by means of bolsters and bandages should rather be depended upon; and when that cannot be done, the vessel must be tied up above the wound and below, by which the bleeding will be effectually suppressed. No danger is to be apprehended from slight bleedings in the horse, as they always cease spontaneously.

The styptics commonly employed are oil of turpentine, diluted vitriolic acid, muriate of iron, absorbent earths, and flour.

STYRAX. See Storax.

SUBLIMATE, CORROSIVE. Oxymuriate of Quicksilver. *Hydrargyri Oxymurias.* This is by far the strongest of the mercurial preparations, and requires to be used with great caution. It has been employed with success in farcy: and in one instance I have seen it cure the glanders; but the horse was shot soon after; therefore it is uncertain whether the cure was permanent or not. In many cases of farcy that were supposed to be cured by sublimate, aided by external applications, I have seen the glanders break out after an interval of a few weeks or even months. (See vols. i. and iii. Glanders.) The dose of sublimate is from eight to ten, twelve, or fifteen grains, given daily, until the desired effect is produced, or until the mouth becomes sore, or the horse stales profusely, and then it should be discontinued a short time. Whenever sublimate makes a horse sick, or causes any uneasiness in the bowels, it should be immediately discontinued. In the various experiments that have been made upon glandered horses, it has been given in very large doses, even to the extent of two drams twice a day. No good, however, has ever resulted from such large doses, and the poor animals have often been dreadfully tormented by them. I am now decidedly of opinion, that in glanders and farcy the milder preparations should be preferred, especially Ethiop's mineral, and the mercurial or blue pill. (See vols. i. and iii.) M. Dupuy injected a solution of sublimate into the jugular vein of a glan-

dered horse. It caused almost immediately severe colic pains, and a continual shaking of the tail. It produced also a remarkable effect upon the kidneys, causing the horse to stale frequently, even twelve times in the space of a quarter of an hour. The following day he injected a stronger solution, which caused still more distressing symptoms; the next day a still stronger solution, which, after tormenting the poor animal for some time, put an end to his sufferings. The symptoms of glanders were not at all diminished by it. Another glandered horse took sublimate for a month, without receiving any benefit from it. M. Houba, a French veterinarian, gave an ounce of sublimate in a mucilaginous decoction, to a colt of one year old affected with farcy. He increased the dose of sublimate until it amounted to 2 ounces, 3 drams, 12 grains, or 64 grammes (a gramme is 18 grains). This immense dose, he says, after some days made the ulcers look red, the discharge lost its offensive smell and became whiter and thicker, and some of the ulcers cicatrized; the colt also fed well and appeared cheerful, but after a short time he began to discharge at the nostrils, and had a swelling under the jaws; in short, he became so badly glandered that it was thought necessary to destroy him. (See Dupuy de l'Affection Tuberculeuse, vulgairement appelée Morve, p. 188.)

Sublimate is often used externally, either in powder or solution. It is sometimes an ingredient in liquid blisters. (See Blisters.)

In obstinate cases of chronic grease, I have seen

a solution of sublimate effect a cure in a very short time.

In obstinate cases of mange a solution of sublimate is sometimes employed; but in three instances I have known inflammation of the bowels take place very soon after.

Sublimate is difficult of solution in water only; it is usual, therefore, to rub it first in a mortar with a little proof spirit, or with a little muriate of ammonia; but the most ready method of dissolving it is to rub it with an equal weight of muriatic acid, and then to add as much water as is required. This last solution is much stronger than any other.

SUBMURIATE OF MERCURY.—*Hydrargyri Submurias.* See Calomel.

SUCCINUM. See Amber.

SUDORIFICS. Medicines that cause sensible perspiration or sweating. In the horse there is no medicine that will, with certainty, produce this effect, and it is only by exercise or warm clothing that it can be produced. In locked-jaw a horse has been kept in a state of perspiration for a considerable time by being covered with sheep-skins. (See vol. i. art. Locked-jaw, Appendix.) Vinegar and acetate of ammonia will sometimes cause perspiration; and opium, with emetic tartar, camphor, and cordials, are said to have a sudorific effect; also ipecacuanha, with opium, camphor, and salt of hartshorn. There are but few diseases in the horse, however, where such an effect is required; and medicines of the sudorific kind can seldom be employed

with safety, unless it be after the animal has been freely bled, and has taken opening medicine. The diseases of horses are most commonly of an inflammatory nature, requiring bleeding with opening, cooling, or diuretic medicines.

SUET, MUTTON; BEEF.—*Sevum Ovillum; Bovinum.* Prepared suet is used in the composition of ointments and plasters. Suet boiled in milk has been recommended in the scouring rot of horned cattle.

SUGAR OF LEAD. Acetate and Superacetate of Lead.—*Saccharum Saturni. Plumbi Acetas et Superacetas.* See Lead.

SULPHATE OF ALUMINE.—*Aluminæ Sulphas.* See Alum.

SULPHATE OF COPPER.—*Cupri Sulphas.* Blue Vitriol, or Blue Stone. This preparation of copper is much used in veterinary practice as an external application; it is a mild caustic or escharotic, and when dissolved in water, forms a good detergent or astringent lotion. The addition of a little sulphuric, nitrous, or muriatic acid to this lotion increases its strength as a detergent, and when the proportion is considerable makes it a strong caustic. A solution of sulphate of copper in vinegar, or vinegar and water, makes a good wash for the foot rot in sheep. Sulphate of copper should be finely powdered when sprinkled on ulcers, or when mixed with lard or other unctuous matter into an ointment. When a solution of sulphate of copper is sufficiently diluted, it may be used as a mild astringent, and when very

weak, may be applied even to the eye. Sulphate of copper has been given internally as a tonic in diabetes, and in farcy; the dose from half a dram to a dram.

SULPHATE OF IRON. Salt of Steel. *Ferri Sulphas.* A preparation composed of sulphuric acid and oxide of iron. It is sometimes used as a tonic. The dose from one to two or three drams.

SULPHATE OF MAGNESIA, or EPSOM SALT.—*Magnesiæ Sulphas.* A mild laxative that may be given with advantage in catarrhal disorders. The dose from four to twelve ounces, dissolved in a sufficient quantity of water. When a small dose is given, it should be repeated every four or six hours, until some effect is produced.

From four to eight ounces of castor or olive oil is sometimes added to a dose of the solution of sulphate of magnesia.

SULPHATE OF POTASH.—*Potassæ Sulphas.* Vitriolated Tartar, or Sal-polychrest.

This neutral salt is a more powerful laxative than the sulphates of magnesia and soda, and more sparingly soluble in water. On this account it is most commonly employed in human medicine, in powder; and, when joined with rhubarb, makes a good purgative. It is seldom used, I believe, for horses or cattle, though it may, perhaps, make a good laxative if well rubbed in a mortar with aloes, and then formed into a ball.

SULPHATE OF QUININE.—*Quininæ Sulphas.* See Bark.

SULPHATE OF SODA.—*Sodæ Sulphas.* Vitriolated Soda, or Glauber's Salt. This is a good laxative, and rather stronger than sulphate of magnesia. I have been informed by a correspondent in Ireland, that he employed it with great success in an epidemic catarrh, and without losing a single patient, while a great number died under a different treatment. He gave about four to six ounces three times a day, in a quart of water or gruel, until the bowels were opened. It is a good laxative for cattle: the dose from six to twelve ounces.

SULPHATE OF ZINC.—*Zinci Sulphas.* Vitriolated Zinc, White Vitriol, or White Copperas. This is a strong astringent application, but may be dissolved in water, and so diluted as to make a useful wash for the eye. It is sometimes given internally as a tonic; and, though very large doses have been given to glandered horses as an experiment, without causing much inconvenience, and half an ounce or more as a tonic, I am inclined to think, by giving daily one or two drams, it is more likely to do good. But I would not advise this or any other mineral tonic to be given, till other means have proved ineffectual. (See vols. i. and iii.)

SULPHATES. Neutral salts composed of sulphuric acid and alkalies, earths, or metals.

SULPHUR. Brimstone. See Flowers of Sulphur.

SULPHURETS. Combinations of sulphur with alkalies, earths, or metals. The preparations of this kind used in veterinary medicine are Sulphuret of Antimony (see Antimony), Sulphuret of Arsenic

(see Orpiment), Sulphuret of Mercury, black and red (see Ethiop's Mineral and Cinnabar), Sulphuret of Potash, or Liver of Sulphur. This last is a good remedy for diseases of the skin, such as mange, and may be given inwardly as an antidote to certain poisons, as arsenic, lead, and preparations of mercury.

SULPHURIC ACID.—*Acidum Sulphuricum.* Vitriolic Acid, or Oil of Vitriol. (See Acids.)

SUMACH LEAVES. See Rhus Toxicodendron.

SWEET SPIRIT OF NITRE. See Acid, Nitric and Nitrous.

SWIETENIA FEBRIFUGA. This tree is a native of the East Indies. The properties of the bark are similar to those of the Mahogany Tree.

SYRUP.—*Syrupus.* For all veterinary purposes treacle is a good and a cheap substitute for syrup.

TALLOW. A mixture of equal parts of tar and tallow is a good application to brittle hooves.

TANSY.—*Tanacetum.* This plant grows abundantly about the borders of fields; it has a strong bitter taste, and rather a pleasant odour. It may be employed in the form of a decoction as a vehicle for tonic or stomachic medicines. It has been said to possess an anthelmintic quality, but I believe there is no foundation for this opinion. It is used also in fomentations.

TAR.—*Pix Liquida.* This is a good remedy for thrushes, and other diseases of the *frog.* It ap-

pears to promote the growth of horn, by gently stimulating the secretory vessels of that part.

The rotten parts of the frog having been carefully removed with a knife, and the rest well cleansed, the tar is to be melted and poured into the cleft or cavity: a pledget of tow is then to be laid on the part and confined by some proper contrivance. In bad cases, a small proportion of sulphuric acid should be carefully mixed with the tar; and when a thrush has degenerated into the disease termed *canker*, a larger proportion of the acid should be employed. (See Liniments.)

Tar mixed with oil of turpentine and cantharides forms a strong blister. Farriers sometimes employ tar as a remedy for cough; but it more frequently aggravates than relieves the complaint. (See also Barbadoes Tar.)

Tar, when mixed with verdigris or finely powdered blue or white vitriol, forms a good liniment or ointment for canker or thrushes. It may be occasionally employed with alum, and, when mixed with tallow, is an excellent stopping for flat thin soles. In the latter form it makes a good hoof ointment; and, when rubbed about the coronet and hoof, is said to render the hoof tough. (See vols. i. and iii.)

TARTAR.—*Tartarum.* An acid substance, found about the sides and bottoms of casks in which wine is fermented; when purified, it is termed *crystals*, or *cream*, of tartar. Farriers generally employ it in their purging medicines, upon the autho-

rity of some old writers, who supposed it to have the property of correcting aloes. (See Cathartics.)

TARTAR, EMETIC. See Emetic Tartar.

TARTAR, SOLUBLE. See Soluble Tartar.

TARTAR, VITRIOLATED. See Sulphate of Potash.

TARTARIZED ANTIMONY. See Emetic Tartar and Antimony.

TARTRATE OF POTASS. See Soluble Tartar.

TEREBINTHINA. See Turpentine.

THORN-APPLE.—*Datura Stramonium.* This is an annual plant, a native of America, but is now found growing in great abundance in this country. It is a powerful narcotic, that has not, as far as I know, been tried as a horse medicine.

TIGLII OLEUM. Croton Oil; which see.

TIN.—*Stannum.* This metal is a good anthelmintic for dogs; and though not employed in veterinary practice, appears to be worth a trial. I have known great numbers of worms discharged from dogs, by giving filings or scrapings of pewter, which is composed principally of tin and lead. The dose about a dram. (See Anthelmintics.)

TINCTURES.—*Tincturæ.* Medical preparations made by infusing or digesting vegetables, &c. either in rectified or proof spirit. Examples:—Compound tincture of benzoin, commonly named Friar's or Traumatic Balsam, is made by digesting gum benzoin, aloes, &c. in rectified spirit. Tincture of opium is made by digesting opium in proof

spirit. There are also tinctures made with vinegar, such as Squill and Meadow Saffron. Compound Spirit of Ammonia, likewise, is sometimes employed as a menstruum, as in the volatile tincture of guaiacum, and fœtid spirit of ammonia.

TOBACCO.—*Nicotiana.* This is sometimes given to horses by grooms, for the purpose of keeping their legs fine.*

TOLU, BALSAM OF. See Balsam of Tolu.

TONICS. Tonics, according to Murray, are those substances whose primary operation is to give strength to the system. Their operation is not mechanical, as was once conceived; they act not on

* A short time since an infusion of about two ounces of tobacco, in a quart of beer, was given to a horse merely for the purpose of keeping his heels fine. He died immediately after taking it.

I was not present when this circumstance occurred, but am satisfied of the truth of it. I am inclined to believe, however, that there must have been something in this case that was not discovered;—the stomach may have been previously diseased. I have, within a short period, given an infusion of tobacco, as well as the tobacco that the infusion had been made from, in the dose of two, three, and four ounces. The only perceptible effect was a shivering, and an appearance which indicated a considerable affection of the stomach, not altogether like nausea, yet approaching towards it; but the effect was transient. According to Boardman, an infusion of three pounds of tobacco has been given without effect. In Bourgelat's Matière Médicale Raisonée, it is said to make an efficacious clyster in obstinate costiveness; and is prescribed also in chewing-balls or masticatories. (See Veterinary Dictionary.) Muriate of ammonia, dissolved in a decoction of tobacco, is said to be a good remedy for the mange; rubbing the affected parts with the fresh leaves of tobacco is said to have the same effect. It is also employed for the mange in sheep and dogs, and in the latter serves to kill fleas and ticks.

the simple solids, increasing their tension or tone, but on the living fibre, and are merely powerful stimulants permanent in their operation. By producing a gradual excitement, they give vigour to the actions of the system; and as that excitement is gradually produced, it is in like manner gradually diminished, and the habitual stimuli continuing to operate, diminished action does not succeed. Where tonics, however, are given in excess, are used unnecessarily, or for too long a time, they weaken the powers of life. Tonics act primarily on the stomach, the action they excite in that organ being communicated generally by the medium of the nerves to the rest of the system; some of them, however, are received into the mass of the blood. The immediate effects of a tonic, given in a proper dose, are to increase the force of the circulation, to augment the animal heat, promote the various secretions, or moderate them when morbidly increased, quicken digestion, and render muscular action more easy and vigorous. By some of them these effects are very slowly induced. The affections of the system in which tonics are employed must be obviously those of debility. But previously to their being employed, it is necessary to inquire on what that debility depends; if it be simply on want of tone, as it is termed, in the stomach, and consequently in the system in general, the use of tonics is clearly indicated; but if it arise from unwholesome, or an insufficient quantity of food, hard labour and exposure to the inclemencies of the weather, or the exhalations of a damp, close,

filthy stable, tonics will avail nothing until the situation, treatment, and food, are materially improved; that such cruel and abominable treatment is frequently, if not always, the cause of debility in horses is well known; therefore no further comment upon the folly and cruelty of such treatment is necessary in this place. Before tonics are given, it is generally necessary to give some warm purgative medicine. While the horse is taking tonics great attention should be paid to his diet; and it would not be going too far, I believe, were I to assert, that by judicious management with regard to food, grooming, and exercise, and the occasional use of mild physic, horses would seldom require tonic medicine. In England, horses are certainly worked beyond their power; and, though rendered capable by artificial means, such as training, of wonderful exertions for a short period; yet were it generally known how materially the duration of their life and services are abridged by such practices, a feeling of interest, one would think, were there no better motive, would prevent their continuance, and meliorate, in some degree, the condition of these useful, but ill-treated, animals. Scarcely a week or a day passes without hearing of some astonishing exertion in galloping or trotting matches upon hard roads; and the barbarous attempt to ride a noble animal from Ipswich to London, and back again, in twelve hours, is by no means a solitary example of such cruelty.

Tonics may be divided into minerals and vegetables; the former are generally considered the most

powerful, and, I believe, are at this time generally preferred, not only on account of their supposed superior efficacy, but likewise, probably, from their being less expensive, and the dose less bulky and inconvenient.

In the former editions of this work, I have generally given them a preference, but subsequent experience and reflection have led me to employ them with more caution, and with less confidence in their reputed innoxious qualities; for, notwithstanding the immense doses of arsenic, and blue vitriol (sulphate of copper), that have been given without producing any immediate ill effect, it is highly probable that the stomach suffers materially, especially when the use of such medicines is persisted in. I have examined a horse's stomach that had been taking these mineral tonics, and thought they had not diminished the animal's appetite or altered his appearance, on the contrary, he was in high condition, and did his work well, yet, being glandered, was destroyed. The stomach, however, had been greatly injured, and would, no doubt, had the animal lived much longer, have produced some serious disorder.

This question naturally arises:—In what respects are those mineral tonics, so well known as powerful poisons in the human body, preferable to those obtained from the vegetable kingdom? In the first place they are considered as the only medicines capable of curing the glanders and farcy, and are therefore prescribed for those diseases. I have never

seen a single case of glanders permanently cured, either by arsenic or blue vitriol, notwithstanding the numerous trials I have witnessed during a period of more than twenty years. Farcy has certainly disappeared in many instances while taking those medicines, but at the same time some local remedies were employed, that is, the farcy sores were dressed with some caustic, escharotic, or detergent composition; and it is well known that farcy, *i. e.* the sores, buds, and all the external symptoms or appearances, may generally be removed by external applications alone; therefore it is uncertain what share the tonic, whether it be arsenic or blue vitriol, has had in the cure of the disease. (See vol. iii. Glanders and Farcy.) Another circumstance to be considered is, that farcy, though apparently cured by means of those strong medicines, is often not really or permanently eradicated, but frequently is succeeded by glanders; and, though the interval between the disappearance of farcy and the appearance of glanders is sometimes considerable, there are circumstances which render it extremely probable that they are connected, and depend on the operation of the same cause. But whatever share arsenic, blue vitriol, or sublimate may have had in the cures that have been effected, whether permanent or only temporary, small doses have generally been found sufficient; that is, of arsenic, from ten to fifteen or twenty grains; sublimate, from ten to fifteen grains; blue vitriol, from half a dram to one dram, or, at most, two drams; white vitriol, from

one to three drams. The experiments, therefore, in which large doses have been given, such as two drams of arsenic or sublimate once or twice a day and continued for some time, should never be repeated, as they are really more likely to defeat the purpose for which they are given than to promote it; and there can be no doubt that, notwithstanding the little immediate effect they appear to have on the stomach, this important organ is often most seriously and permanently injured by them. That these medicines are incapable of curing the glanders, when employed with moderation, has been fully proved; and if they can cure the farcy, it is more likely to be accomplished by small or moderate doses, judiciously combined, and assisted by a suitable diet and good grooming, than by the large doses which have been given in many fruitless and painful experiments. (See Ethiop's Mineral, Mercurial Pill, and Sublimate.)

The following is the list of Tonics given by Murray, as employed in human medicine:—

TONICS FROM THE MINERAL KINGDOM.

Preparations of *quicksilver* or *mercury*; of *iron*; of *zinc*; of *copper*; of *arsenic*; of barytes; of lime; nitrous acid; *oxymuriate of potash.*

FROM THE VEGETABLE KINGDOM.

Peruvian bark, pale yellow and red; Angustura bark; snake-root; contrayerva; canella alba; cascarilla; colombo; quassia; quassia Simaruba; gentian; chamomile; wormwood; centaury; Se-

ville orange-peel ; *horehound* ; buckbean ; cinnamon ; cassia ; ginger ; nutmegs ; cloves ; pepper ; cayenne, long and black ; cubebs ; allspice ; cardamom seeds ; caraway seeds ; coriander seeds ; aniseseeds ; fennel seeds ; dill seeds ; cumin seeds ; Angelica ; mint ; peppermint ; penny-royal, and hyssop.

Among the mineral tonics, those printed in italics only are used in veterinary medicine, and may be employed either separately or in combination.

The following are examples :—

No. 1. Powdered arsenic .... from 5 to 10 gr.
Powdered anise-seed .... ½ oz.
Opium .... ½ dr.
Treacle enough to form the ball.

No. 2. Arsenic .... from 5 to 10 gr.
Sulphate of copper .... ½ dr.
Opium .... ½ dr.
Powdered caraways .... ½ oz.
Treacle enough to form the ball.

No. 3. Arsenic .... from 5 to 10 gr.
Opium .... ½ dr.
Sulphate of zinc .... 2 dr.
Caraway seeds .... ½ oz.
Treacle enough to form the ball.

No. 4. Arsenic .... from 5 to 10 gr.
Opium .... ½ dr.
Sulphate of iron .... 2 dr.
Caraway seeds .... ½ oz.
Treacle enough to form the ball.

The opium in these balls is intended to enable

the stomach to bear the mineral preparations better than it otherwise could; but by many practitioners it is thought unnecessary.

In farcy, sublimate (oxymuriate of mercury) may be added to either of the balls; but this medicine cannot, with propriety, be classed with tonics in veterinary medicine, for its effect, when given for several days, is that of producing debility, and an increased flow of urine. The dose is the same as arsenic. The vegetable tonics I consider as an important class of medicines, especially those printed in italics: the others are rather stimulants, cordials, carminatives, and stomachics, than tonics. A description of each, as well as of each mineral tonic, will be found under its respective name. This article may appear of an unnecessary length, but I wish to caution the reader against the immoderate and inconsiderate use of the mineral tonics, particularly arsenic and blue vitriol, or sulphate of copper, as well as sublimate and other preparations of mercury, especially against useless experiments with these powerful preparations. I am desirous also of reminding him, that when horses are treated with humanity, and paid proper attention to with respect to feeding and exercise, they will seldom have occasion for tonics or any other medicine, nor will they be so subject, as they now are, to the numerous lamenesses by which so many are rendered unserviceable, even before they have arrived at maturity. This article will now be concluded with some formulæ for vegetable tonics.

No. 1. Peruvian bark .... 1 oz.
Opium .... ½ dr.
Ginger .... 1½ dr.
Oil of caraways .... 20 drops.
Treacle enough to form the ball.—One dose.

No. 2. Colombo root .... from 3 to 4 dr.
Aromatic powder .... 1½ dr.
Opium .... ½ dr.
Powdered caraways .... 4 dr.
Treacle enough to form the ball.

No. 3. Cascarilla .... 2 dr.
Gentian root .... 2 dr.
Opium .... ½ dr.
Oil of caraways .... 20 drops.
Treacle enough to form the ball.

No. 4. Quassia .... 2 dr.
Canella alba .... 2 dr.
Opium .... ½ dr.
Ginger .... 1 dr.
Treacle enough to form the ball.

No. 5. Gentian root .... 3 dr.
Opium .... ½ dr.
Cascarilla .... 1 dr.
Myrrh .... 1 dr.
Carbonate of soda .... 1 dr.
Treacle enough to form the ball.

No. 6. Colombo .... 3 to 4 dr.
Opium .... ½ dr.
Cassia .... 1 dr.
Powdered allspice .... 2 dr.
Treacle enough to form the ball.

These formulæ may be considerably varied, or given as drenches in warm ale, or in an infusion of some aromatic or bitter herb, and if preceded by a mild purgative, and assisted by a light nutritious diet, will often do much good, more perhaps than the mineral tonics. (See vol. i. articles Stable, Grooming, Feeding, &c.; also Cathartics, Laxatives, Stomachics, and Restoratives, in this volume.)

TORMENTIL ROOT.—*Tormentillæ Radix.* This is an indigenous perennial plant, growing chiefly in dry heathy spots. It is a powerful astringent, and is sometimes employed in diarrhœa in horses and horned cattle.

One ounce, or one ounce and a half, being boiled in three pints of water to one pint and a half, with a little cassia and caraway seeds, makes one dose, which may be repeated if necessary.

TOXICODENDRON. See Rhus Toxicodendron.

TRAGACANTH, GUM; or GUM DRAGON. *Tragacantha.* The shrub from which this gum is obtained is a native of Persia. When good, tragacanth should be whitish, semi-transparent, inodorous, and leaving a slightly bitter taste in the mouth when chewed. Its properties are demulcent, and, as it yields a strong mucilage, it may be employed instead of gum arabic in the formation of emollient drinks.

TRAUMATIC or FRIAR'S BALSAM.—*Tinctura Benzoïni Composita.* Traumatic balsam is the compound tincture of benzoin, and is made in the following manner:—

Benzoin	....	3 oz.
Strained storax balsam	....	2 oz.
Balsam of tolu	....	1 oz.
Extract of spiked aloes	....	½ oz.
Rectified spirit	....	1 qt.

Digest for fourteen days, and filter or strain.

As the name of this balsam implies, it is generally employed as an application to wounds which require a slight stimulus. It is rarely prescribed as an internal remedy, although it has been deemed useful in chronic cough, and some other pulmonary affections. As it is decomposed by water it must, when administered internally, be first triturated with mucilage or yolk of egg, in order to suspend it in aqueous fluids. (See Benzoin.)

TRITICUM; FARINA; AMYLUM. Wheat; Wheat-flour; Starch. Wheat is never given to horses as food in this country, both on account of its price and because it is apt to produce colic. Wheat-flour gruel is occasionally given in diarrhœa, and starch is sometimes used in the composition of clysters in the same disease.

TURMERIC.—*Curcuma.* In some Pharmacopœiæ curcuma is the name given to turmeric, in others to zedoary. They are both agreeable stimulants, and the former is still highly esteemed by farriers as a remedy for the jaundice or yellows, although it does not appear to possess any peculiar virtues which may not be found in other aromatic stimulants. The dose is about an ounce.

TURNIPS. Boiled turnips make an excellent poultice for the heels when affected with grease.

TURPENTINE.—*Terebinthina.* This term is applied to the resinous juices of certain trees. There are four kinds, viz. Chio, Strasburgh, Venice, and common turpentine; the two last only are employed in veterinary medicine. They are effectual diuretics, and possess a considerable carminative power. Common turpentine is a principal ingredient in digestive and detergent ointments. By distillation we obtain from it the oil, or as it is sometimes termed, the spirit of turpentine, a medicine of great utility. In doses of two, three, or four ounces, it frequently cures the flatulent colic, or gripes; and, when combined with camphor and other stimulants, makes a good embrocation for indurated swellings, strains, and bruises. When properly mixed with mustard, it forms an embrocation that has been found serviceable in counteracting *internal* inflammation. I have seen it applied to obstinate ulcers with good effect. It is an useful ingredient in blistering-ointment, and liniments.

Venice turpentine is generally made by mixing the oil with the common turpentine, which is easily done when the latter is melted.

Venice turpentine is sometimes employed as an ingredient in cough medicines. The dose is about half an ounce. But if given as a remedy for flatulent cholic, or as a diuretic, a larger quantity is necessary. It makes a good detergent ointment, if

mixed with about a fourth or a third part of red precipitate, finely powdered.

In speaking of the turpentines, Dr. Paris says, they all possess the same chemical as well as medicinal properties; viz. Canada turpentine, or Canada balsam, as it is sometimes improperly called, is obtained from the Pinus Balsamea. 2dly, Chian or Cyprus turpentine, from the Pistachea Terebinthinus. 3dly, Common, or horse turpentine, from the Pinus Sylvestris, or Scotch fir. 4thly, Venice turpentine, from the Pinus Larix: from the twigs of which species of fir the essence of spruce is made. True Riga balsam is made from the shoots of the Pinus Cembra, previously bruised and macerated for a month in water. The same fir affords also Briançon turpentine. In my Veterinary Dictionary there is a communication respecting the use of oil of turpentine as an anthelmintic. (See article Worms.) It is certainly, if properly managed, the most efficacious medicine that can be employed for expelling them from the bowels. (See Anthelmintics.) In large doses it generally acts as a purgative, especially when the bowels are previously relaxed by bran mashes, or a small dose of aloes. In small doses it is a powerful diuretic. Mr. Coleman considered it almost a specific in flatulent colic in a dose of four ounces, mixed with gruel. It has been given to the extent of eight ounces at a dose, without injury; but in one case a dose of four ounces produced a fatal inflammation of the stomach and bowels: in this case, however, a dose of physic

had been given the day before, and the horse had a considerable purging at the time the turpentine was exhibited. In the human body two drams of oil of turpentine may so excite the kidneys as to produce bloody urine, whereas six or eight drams will stimulate the bowels, and purge without affecting the urinary organs, or only in a moderate degree. It is said to be almost a specific remedy for tape worm, in the human body, always discharging it dead; and in obstinate constipation, depending on affections of the brain, Dr. Paris says he has several times witnessed its beneficial effects.

Dr. Latham considers it a valuable medicine in epilepsy. As a veterinary medicine it is certainly of great value; and though in a few cases, when given internally, it has produced violent effects, merely, I believe, from bad management, yet when judiciously administered, it may be employed in a dose of four ounces, with advantage and safety. (See vol. i. article Worms, and Veterinary Dictionary.)

I have long discontinued the use of oil of turpentine in my practice as a remedy for flatulent colic, gripes, or fret, finding the preparations of *opium* far more effectual. (See Opium.) With respect to worms, it will be seen in some parts of this edition of the Materia Medica, as well as in the First Volume, or Compendium, that I consider it is of more importance to prevent worms than to expel them from the bowels. When the stomach has been weakened or disordered, worms will be generated in

the bowels, and even in the arteries, on whatever food the animal is kept. To expel them, therefore, from the bowels is doing but little for the cure of the disorder; and those medicines which do expel them, such as oil of turpentine, and large doses of calomel, may increase that morbid state of the stomach, on which their existence depends. (See vol. i. article Worms; also Preface to this volume, and articles Tonics, Arsenic, and Anthelmintics.)

TURPETH MINERAL, or YELLOW SUB-SULPHATE OF QUICKSILVER.—*Sub-Sulphas Hydrargyri Flavus.* This mercurial preparation is seldom used in veterinary practice, being apt to irritate the stomach and bowels, and bring on violent purging; but it has been recommended as a remedy for farcy.

The dose is from half a dram to a dram.

It is given as an emetic to dogs, when they have swallowed any poisonous substance, or at the commencement of *the distemper.*

TUSSILAGO. Colt's-foot; which see.

TUTTY or IMPURE OXIDE OF ZINC.—*Oxydum Zinci Impurum.* A gray earthy substance, not used in veterinary practice.

ULMI CORTEX. See Elm Bark.

UNGUENTS or OINTMENTS.—*Unguenta.* See Ointments.

UVA URSI. Bearberry or Trailing Arbutus. This shrub is a native of the northern parts of Europe. Its properties are astringent, and it has been found extremely beneficial as a human medi-

cine, in ulcerations of the urinary organs. I am not aware that it is employed by Veterinarians. (See Arbutus.)

VALERIAN ROOT, WILD. — *Valerianæ Radix.* This is an indigenous perennial plant, the root of which has a strong unpleasant odour, and a bitter and rather acrid taste. The dried root is employed by medical practitioners in spasmodic and nervous complaints; but there is no disease of the horse in which it is likely to be serviceable.

VERATRUM. White Hellebore. See Hellebore.

VERDIGRIS.—*Ærugo.* The rust of copper. This is made in wine countries, by burying thin copper plates in the refuse parts of the grape, after the juice has been pressed out. It is employed externally as a mild caustic or detergent, and is frequently mixed with common turpentine, or ointments, for the same purpose. (See Detergents and Digestives.)

When verdigris is dissolved in distilled vinegar, and crystallized, it becomes considerably stronger, and will be found an excellent remedy for *quittors*. (See vol. i.) In this state it is called crystallized or distilled verdigris. Common verdigris has been recommended as a remedy for the farcy; but I have never seen it do any good in that complaint, though I have several times given it a trial.

It has been fairly tried in the glanders; half an ounce was given daily for a considerable time, but it had no effect on the disease, nor did it occasion

any inconvenience to the animal. This is rather remarkable, as verdigris is considered as a poison in the human body, and is the substance which causes the deleterious effects which copper vessels, when employed for culinary purposes, have sometimes occasioned.

VERMILION. This is prepared nearly in the same way as *cinnabar*; but as a little arsenic is sometimes employed to heighten its colour, it is never used for medical purposes.

VESICATORIES. A term synonimous with blisters.

VINEGAR.—*Acetum.* Though medical practitioners prefer distilled vinegar, yet for veterinary purposes the best undistilled vinegar is just as proper. It makes an useful embrocation, with about a tenth part of *sal ammoniac* or muriate of ammonia, for inflamed swellings; and when neutralized with prepared ammonia, or salt of hartshorn, forms a preparation, sometimes employed in fevers, and termed Mindererus's spirit.

Vinegar is sometimes used alone as an embrocation for strains, bruises, or inflamed swellings of any kind, and often with success; it may be made more effectual, however, by the addition of sal ammoniac and proof spirit, or by being mixed with a small quantity of sugar of lead and water, according to the circumstances of the case. A solution of honey in vinegar is termed an oxymel, and is sometimes used as a remedy for coughs: this is said to be nearly the same preparation as Godbold's

vegetable syrup, which has been sometimes recommended by farriers to cure broken wind, an incurable disease! (See Acetates and Embrocations.)

VINUM. See Wine.

VIPER'S FAT is similar in its medical qualities to common fat; though formerly supposed to be a remedy for the bite of the viper, and other venomous reptiles.

VITRIOL, BLUE and WHITE. See Sulphate of Copper, and Sulphate of Zinc.

VITRIOLIC ACID.—*Acidum Sulphuricum.* This, which is more commonly named *oil of vitriol*, is now in all modern dispensatories named sulphuric acid, and its combinations are therefore named *Sulphates*. Examples: instead of vitriolated copper, iron, potash, &c. we have sulphate of iron, sulphate of zinc, sulphate of potash, &c. (See Sulphates; and Acid, Sulphuric.)

VITRIOLATED COPPER. See Blue Vitriol.

VITRIOLATED IRON. Green Vitriol, or Copperas. This resembles salt of steel in its medical qualities. (See Sulphate of Iron.)

VITRIOLATED KALI, or VITRIOLATED TARTAR: not used in veterinary medicine.

VITRIOLATED NATRON, or SODA. See Sulphate of Soda.

VITRIOLATED QUICKSILVER. See Turpeth Mineral.

VITRIOLATED ZINC. White Vitriol, or Copperas. This has been recommended as a tonic remedy, in doses from half an ounce to six drams.

But I have seen it given to the extent of twelve ounces at one dose, to a glandered horse, by way of experiment, without producing much inconvenience: the only effect produced was upon the urinary organs, occasioning a frequency of, and a little difficulty in, staling. It is a good application to indolent ulcers, and to the heels in the latter stages of grease. (See Astringents, and Tonics.) A weak solution of white vitriol is often employed as an eye-water. (See Sulphate of Zinc.)

VOLATILE LINIMENT. See Liniment.

WATER.—*Aqua.* Much has been written respecting the different qualities of water, some having been considered as very injurious to horses, while others have been said to promote health and condition. Dr. Bracken thought hard or pump water liable to produce the gravel or stone: and other authors have had still more whimsical notions on this subject. It appears probable that transparent and sweet water, that is, such as is most grateful to man, is most wholesome for horses, whether it be taken from a well or from any other situation. The ill effects that have sometimes resulted from drinking certain kinds of water may depend upon its being drank too largely, or at too cold a temperature, at a time when the stomach was not in a condition for receiving so much, or upon its being so ill-tasted that the horse does not take a sufficient quantity for the purposes of digestion; or, if he does, it may create that degree of nausea, which proves injurious to the stomach. In

deep wells the water is generally about the same temperature, both in winter and summer, that is, about 40° of Fahrenheit's thermometer. If a horse, therefore, in a hot summer day, after being heated by exercise, should drink freely of such comparatively cold water, it would probably do him a serious injury; for the water of ponds or running streams may at that time be fifteen degrees warmer. In winter, however, the water of deep wells is generally to be preferred, being considerably warmer than that of ponds or streams. As to the small quantity of sulphate of lime that hard water may contain, it is not probable that it contributes in any degree to the formation of stones either in the bowels or bladder. It is certain, however, that the temperature of water, the quantity taken at a time, the state of the body when taken, and especially the state of the stomach, are circumstances that ought to be carefully attended to. The practice of medicating water, that is, of mixing nitre, salts, &c. with it, may be proper when horses require only a moderate quantity of water; but when dilution is considered necessary, their water should be as free from taste or smell as possible.

Horses under the operation of cathartic medicine, or physic, sometimes refuse warm water, often because it is too warm, or of an unpleasant or smoky smell or taste; in such cases it should be offered a little colder, and free from any offensive smell. Horses are often watered only twice a day, and then suffered to drink as much as they have an in-

clination for; this is particularly injurious to such as have voracious appetites, or worms, chronic cough, imperfect or broken wind. Such horses should have a small or moderate quantity three or four times a day, and their hay and corn should be moistened; this would diminish their appetite for water, which is generally inordinate; and if they are allowed to drink much, they are the more inclined to eat immoderately of hay, if they are restrained in which they will often devour even their litter, however foul it may be, and therefore greatly aggravate their complaint.

WATER-DOCK. See Rumex Aquaticus.

WATER GEMRANDER. See Germander.

WAX, BEES'.—*Cera Flava.* Bees'-wax is used only in the composition of ointments and plasters.

WEIGHTS.—*Pondera.* See Introduction.

WHEAT. See Triticum.

WHEAT-FLOUR. See Triticum.

WHITE-WATER. This is a mixture of oatmeal and water, and is a good nourishing drink for horses that have done a hard day's work. It is a good thing to accustom horses to drink white-water, as, when greatly fatigued, a horse will generally drink, but cannot sometimes be induced to eat.

WINE.—*Vinum.* In French books on farriery, wine is generally recommended, not only alone, but as a vehicle for other cordials. This probably has led some farriers of this country to prescribe port wine in liberal doses, both to horses and cattle. There is a great difference, however, both in the

quality or strength, as well as in the price of port, and the French wines; and it is not probable that the best French wines are ever given to horses or cattle. The port wine of this country contains a large proportion of alcohol (see Alcohol), no less indeed, according to Mr. Brande, in some specimens he examined, than 25 per cent. That is to say, taking the alcohol naturally contained in the wine, or rather the quantity produced by the fermentation of the juice of the grape, with the brandy added to it previous to exportation, it amounts to one-fourth part of alcohol, or one-half proof spirit; but, when the wine is of sufficient age, the spirit is so intimately blended with the other constituent parts, that the strength of the liquor is not manifest to the taste. The French wine commonly employed for horses and cattle is not stronger, perhaps, than our cider. In M. Volpi's veterinary work, which I have before spoken of (see Ethiop's Mineral), he directs no less than two or three bottles of generous wine to be given at one dose, in a disease he terms *fièvre pernicieuse*. With regard to wine in this country, I know of no disease in which it is really necessary; as a little warm beer and ginger, or diluted brandy, will effect every thing that can be accomplished by wine.

WINTER'S BARK.—*Winteræ Aromaticæ Cortex*. The tree from which this bark is obtained is a large evergreen, a native of the Straits of Magellan. The bark has an aromatic odour, and a hot spicy taste. It is a pleasant stimulant; and

though not commonly used in veterinary practice, may be given with good effect in cases of indigestion and weakness of stomach.

The dose from three drams to one ounce every morning.

WOLF'S BANE, or ACONITE.—*Aconitum.* A dangerous medicine in the horse, and never employed, its effect having been ascertained upon glandered horses. (See Remarks on Flour of Sulphur and Aconitum.)

WORMWOOD.—*Absinthium.* This is a common indigenous plant, the properties of which are tonic and anthelmintic, but it is not used as a horse medicine.

YEAST.—*Cerevisiæ Fermentum.* Yeast may be used to form a poultice with linseed-meal for the purpose of correcting the offensive discharge from foul ulcers.

YEW TREE. The leaves of this tree are poisonous to horses and cattle. (See Poisons, Vegetable.)

ZEDOARY. See Turmeric.

ZINC. — *Zincum.* A metallic substance, or rather a semi-metal, the oxide of which is named *Flowers of Zinc* (which see). It affords other medicinal preparations, the most useful of which is sulphate of zinc, or white vitriol. This is employed in making astringent lotions and eye waters, and is sometimes given internally as a tonic. (See Eye-water, Astringents, Tonics, and Flowers of Zinc.)

LIST OF DRUGS,

Referred to in this Volume.

ABSORBENTS.

Calcined Magnesia.
Chalk.
Coral.
Oyster Shells.
Magnesia.
Potash.
Soda.

ANTHELMINTICS.

Aloes.
Box.
Cabbage Tree Bark.
Gratiola Officinalis.
Mercury.
Pink Root.
Rue.
Salt.
Tin.
Turpentine.
Wormwood.

ANTISPASMODICS.

Amber.
Assafoetida.
Camphor.
Castoreum.
Galbanum.
Musk.
Rue.
Sagapenum.
Salt and Spirit of Hartshorn.
Valerian Root.

ASTRINGENTS.

Acacia Catechu.
Alum.
Arbutus Uva Ursi.
Balaustine Flowers
Bistort.
Bole Armenic.
Borax.
Calamine.
Ceruse.
Diascordium.
Dragon's Blood.
Galls.
Geum Urbanum.
Haematoxyli Lignum.
Kino.
Krameriae Radix.
Logwood.
Pomegranate.
Rhataniae Radix.
Rumex Aquaticus.
Scordium.
Starch.
Sulphate of Zinc.
Tormentil Root.

CAUSTICS and ESCHAROTICS.

Acetate of Copper.
Argenti Nitras.
Butter of Antimony.
Muriate of Ammonia.
——— Antimony.
——— Copper.
Muriatic Acid.
Nitric and Nitrous Acids.
Sulphate of Copper.
Sulphuric Acid.
Verdigris.

LIST OF DRUGS,

Referred to in this Volume.

ABSORBENTS.

Calcined Magnesia.
Chalk.
Coral.
Oyster Shells.
Magnesia.
Potash.
Soda.

ANTHELMINTICS.

Aloes.
Box.
Cabbage Tree Bark.
Gratiola Officinalis.
Mercury.
Pink Root.
Rue.
Salt.
Tin.
Turpentine.
Wormwood.

ANTISPASMODICS.

Amber.
Assafœtida.
Camphor.
Castoreum.
Galbanum.
Musk.
Rue.
Sagapenum.
Salt and Spirit of Hartshorn.
Valerian Root.

ASTRINGENTS.

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Sulphate of Zinc.
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CAUSTICS and ESCHAROTICS.

Acetate of Copper.
Argenti Nitras.
Butter of Antimony.
Muriate of Ammonia.
———— Antimony.
———— Copper.
Muriatic Acid.
Nitric and Nitrous Acids.
Sulphate of Copper.
Sulphuric Acid.
Verdigris.

CORDIALS and CARMINATIVES.

Alcohol.
Allspice.
Angelica.
Anise-seed.
Aromatic Confection.
——— Electuary.
——— Powder.
Beer or Ale.
Caraway-seeds.
Carbonate of Ammonia.
Cardamom-seeds.
Cassia Bark.
——— Buds.
Cinnamon.
Cloves.
Contrayerva.
Coriander-seeds.
Cummin-seeds.
Daffy's Elixir.
Dill.
Fennel-seeds.
Ginger.
Grains of Paradise.
Jamaica Pepper.
Mace.
Marjoram.
Mint.
Nutmeg.
Pennyroyal.
Pepper.
Turpentine.
Winter's Bark.

DEMULCENTS & EMOLLIENTS.

Acacia Vera.
Adeps.
Althœa.
Astralagus Tragacantha.
Cetaceum.
Coltsfoot.
Deers' Suet.
Dialthœa.
Gruel.
Gum.
Hog's Lard.
Isinglass.
Linseed.
Mallows.
Marshmallow.
Oil of Almonds.
Spermaceti.

DIURETICS.

Aconitum.
Aasrum.
Balsam of Canada.
——— Copaiba.
——— Gilead.
Barbadoes Tar.
Bitter Sweet.
Buckbean.
Burdock.
Diosma Crenata.
Elm Bark.
Gratiola Officinalis.
Juniper Berries.
Lactuca Virosa.
Nitrate of Potass.
Parsley, the Root.
Rosin.
Soap.
Squill.
Turpentine.

NARCOTICS.

Aconitum.
Arnica.
Belladonna.
Bitter Sweet.
Cabbage Tree Bark.
Diacodion.
Hemlock.
Henbane.
Hop.
Lactuca Virosa.
Opiate Confection.
Opium.
Poppy.
Rhus Toxicodendron.
Thorn Apple.

PECTORALS and EXPECTORANTS.

Ammoniacum.

Balsam, Friar's.
——— of Peru.
——— of Tolu.
——— of Sulphur.
Flowers of Benzoin.
Galbanum.
Garlic.
Gruel.
Honey.
Horehound.
Hyssop.
Ipecacuan.
Liquorice.
Paregoric Elixir.
Squill.
Storax.

PURGATIVES and LAXATIVES.

Aloes.
Asarum.
Buckbean.
Buckthorn.
Castor Oil.
Colocynth.
Croton Oil.
Diagridium.
Flower of Sulphur.
Gamboge.
Gratiola Officinalis.
Hiera Picra.
Jalap.
Linseed Oil.
Muriate of Soda.
Olive Oil.
Phosphate of Soda.
Rhubarb.
Sal Polychrest.
Scammony.
Senna.
Soluble Tartar.
Sulphate of Magnesia.
——————— Potash.
——————— Soda.

STRONG STIMULANTS.

Alcohol.
Ammonia.
Cajeput Oil.
Cantharis.
Capsicum.
Carbonate of Ammonia.
Egyptiacum.
Essence of Peppermint.
——— Mustard.
Ether, Sulphuric.
Euphorbium.
Horse Radish.
Iodinium.
Marum Teucrium.
Mercurial Ointment.
Mustard.
Oil of Origanum.
Opodeldoc.
Orpiment.
Precipitate, Red.
Proof Spirit.
Ranunculus.
Rectified Spirit.
Sal Ammoniac.
— Volatile

TONICS.

Acacia Catechu.
Acorus Calamus.
Ammoniated Copper.
Angelica.
Angustura Bark.
Aristolochia Serpentaria.
Arsenic.
Bark, Peruvian.
Birthwort.
Buckbean.
Canella.
Cascarilla.
Columbo Root.
Cusparia Bark.
Diapente.
Diosma Crenata.
Elm Bark.
Flowers of Zinc.
Galangal.
Gentian.
Geum Urbanum.
Hæmatoxyli Lignum.
Iron.

Mahogany Bark.
Myrrh.
Oak Bark.
Quassia.
Quinine.
Rattlesnake Root.
Rhubarb.
Salacine.
Salt of Steel.
Steel.
Sulphate of Iron.
——— ——— Quinine.
Tansy.
Vitriolated Zinc.

The Reader may also refer to the following articles

Absorbents.
Alteratives.
Anodynes.
Anthelmintics,
Antiseptics.
Antispasmodics.
Astringents.
Balls.
Blisters.
Calomel.
Carminatives.
Cathartics.
Caustics.
Charges.
Cinnabar.
Collyrium.
Cordials.
Decoctions.
Detergents.
Digestives.
Diuretics.
Drench.
Embrocations.
Emetic Tartar.
Emulsions.
Escharotics.
Ethiops' Mineral.
Expectorants.
Eye Water.
Febrifuge.
Fomentations.
Foxglove.
Fumigations.
Hellebore.
James's Powder.
Laxatives.
Lead.
Liniment.
Mercury.
Ointments.
Potash.
Poultice.
Q'uicksilver.
Stomachics.
Sublimate.
Tonics.

ERRATA.

For	*Read*
ARBUTUS.—*Uva Ursi.*	ARBUTUS UVA URSI.
ASTRAGALUS.—*Tragacantha.*	ASTRALAGUS TRAGACANTHA.
HÆMALOXYA LIGNUM	HÆMATOXYLI LIGNUM
HYDRARGIRI SUBMU RIAS.	HYDRARGYRI SUBMURIAS.
LEONTADON TARAXACUM	LEONTODON TARAXACUM.

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